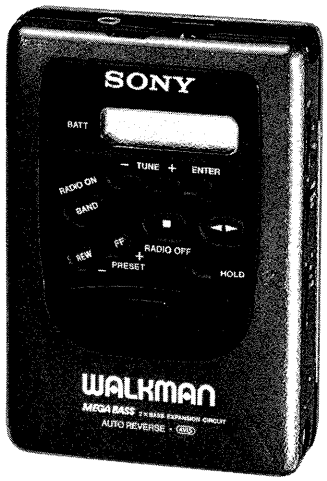
WM-FX52

SERVICE MANUAL

US Model
E Model



Model Name Using Similar Mechanism	WM-FX56
Tape Transport Mechanism Type	MF-WMFX52-60

SPECIFICATIONS

Radio section

Frequency range
FM: 87.5 – 108.0 MHz (0.1 MHz step, for US model)
87.5 – 108.0 MHz (0.05 MHz step, for E model)
AM: 530 – 1,710 kHz (10 kHz step, for US model)
531 – 1,602 kHz (9 kHz step, for E model)

Antenna
FM: Headphones cord antenna
AM: Built-in ferrite bar antenna

Tape player section and general

Frequency response
40 – 15,000 Hz

Output
Headphones
load impedance 8 – 300 Ω

Power output
5 mW + 5 mW 16 Ω at DC operation

Power requirements
3 V DC
Two size AA (R6) batteries
DC IN 3V jack accepts:
Sony AC-E30L AC power adaptor (not supplied)
for use on:
US model: 120 V AC 60Hz
E model: 120 V AC 60 Hz or
220 V AC 50 Hz
Sony DCC-E130L car battery cord (not supplied) for use with 12 V car battery.

Dimensions
Approx. 78 × 114.3 × 33.5 mm ($3^1/_8 \times 4^1/_2 \times 1^3/_8$ in.) (w/h/d) incl. projecting parts and controls

Mass
Approx. 230 g (8.2 oz.) incl. batteries, not incl. other accessories

Accessories supplied
Stereo headphones (1)
Carrying case (1)

Design and specifications subject to change without notice.

Features

- The built-in synthesizer tuner can store up to 7 stations each on the FM and AM bands in memory.
- The LCD display will let you know the current operational mode.
- The hold switch prevents any accidental operation of the unit.
- The AVLS (Automatic Volume Limiter System) function keeps the volume at a moderate level without degrading the sound quality.

Note on the AC power adaptor

Use only the AC-E30L AC power adaptor (not supplied). Do not use any other AC power adaptor.

Polarity of the plug

使用時は添付資料も参照のこと
Refer to the additional documents.

RADIO CASSETTE PLAYER

SONY®

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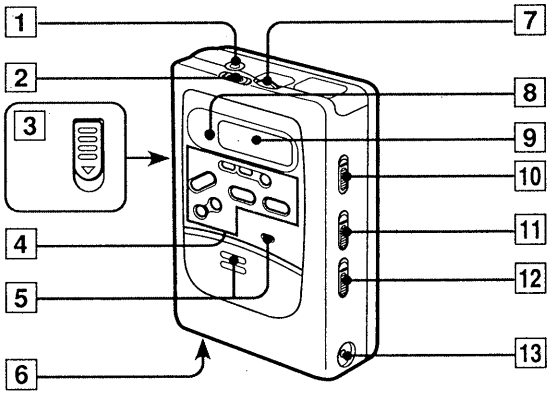
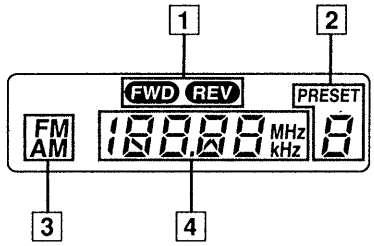
SECTION 1
GENERAL

Parts Identification

Main Unit



Display Window



1 Tape playback side (forward/reverse) indication
2 Preset number/area mode indication
3 Radio band indication
4 Tape operational mode/frequency range indication

1 PHONES (headphones) jack
2 FM SENS (FM sensitivity) selector
3 OPEN switch
4 Tape/Radio operation buttons
5 Hold switch and HOLD indicator
6 Battery compartment
7 VOLUME control
8 BATT (battery) indicator
9 Display window
10 AVLS (Automatic Volume Limiter System) selector
11 TAPE selector
12 MEGA BASS selector
13 DC IN 3V (external power input) jack

SECTION 2
SERVICING NOTE

Photo sensor PH701 mounted on the main board is used to detect rotation of the reels. Because it is mounted on the main board, when the main board is being removed, rotation of the reels cannot be detected and the auto-off/ tape-end detector circuit does not operate correctly.
Switch S702 (for N/R and FF/REW) is also mounted on the main board. Therefore, without the main board, the head cannot be placed in playback position, and power cannot be supplied to the circuitry of the playback system.
When the main board is being removed, follow the procedures below, in order to check operation of the mechanisms of the tape deck and to check voltages supplied to each circuit.

NOTE:

Do not change the setting position of switch S702 when removing the main board. If it has been changed accidentally, or if the desired mode cannot be set with the switch, adjust the setting again after the main board is installed.

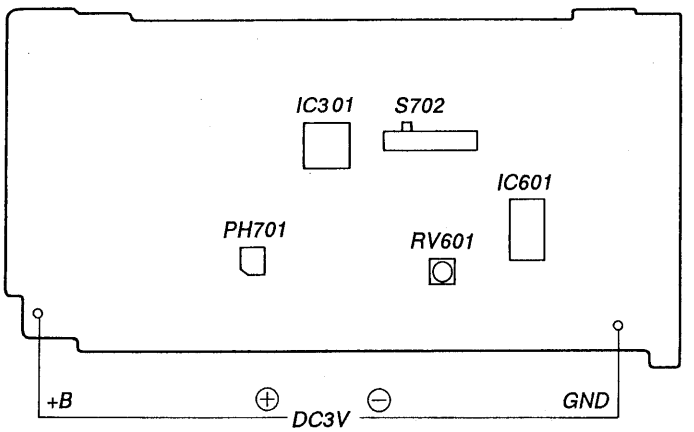
FF/REW mode

(1) Apply a square wave signal or a sine wave signal to photo sensor PH701. (See the figure on the right.)
(2) Press the " ■ " switch for selecting STOP mode.
(3) Press the FF or REW switch.
(4) Remove the main board.

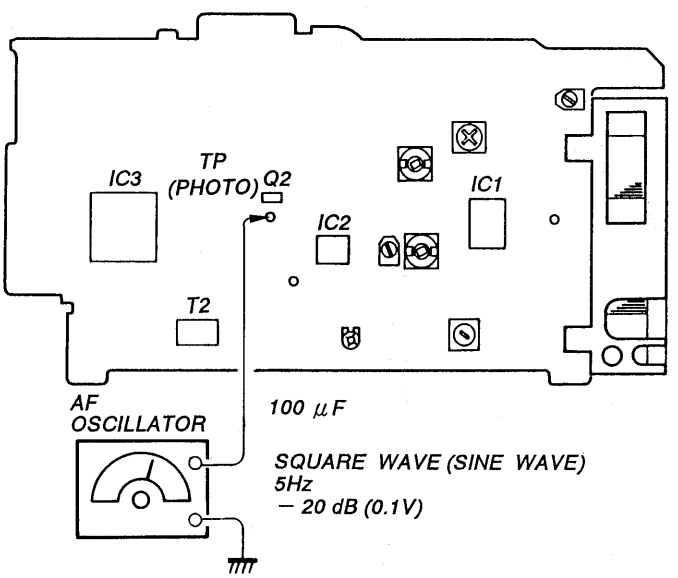
PLAY mode

(1) Apply a square wave signal or a sine wave signal to photo sensor PH701. (See the figure on the right.)
(2) Press the " ■ " switch for selecting STOP mode.
(3) Press the " ◀ ▶ " switch. With the main board installed, pressing the " ◀▶ " switch selects the FWD or REV mode alternatively.
(4) Remove the main board.

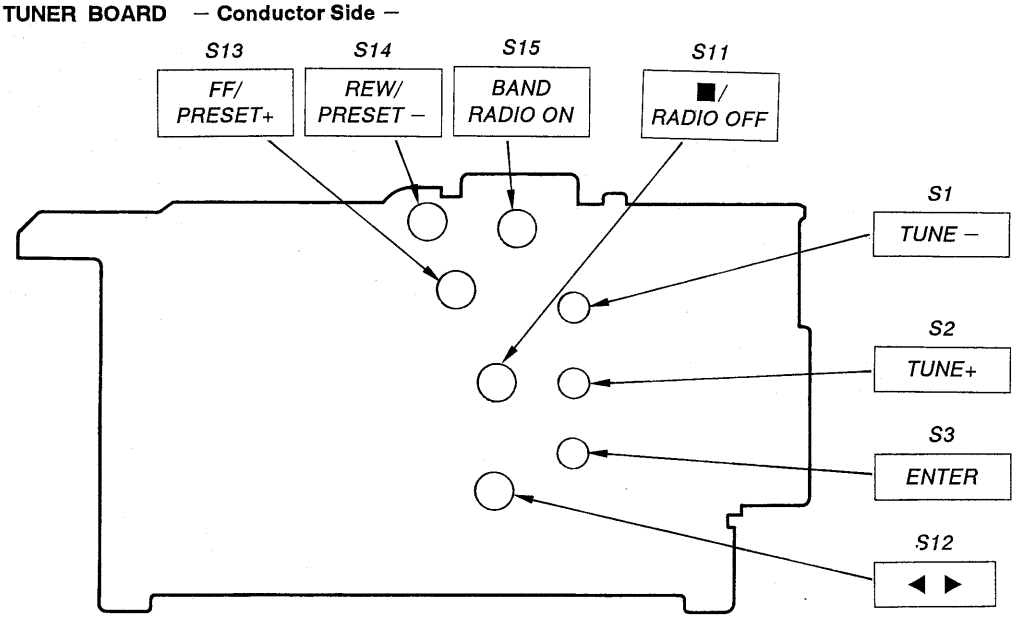
AUDIO BOARD — Side A —



TUNER BOARD — Component Side —

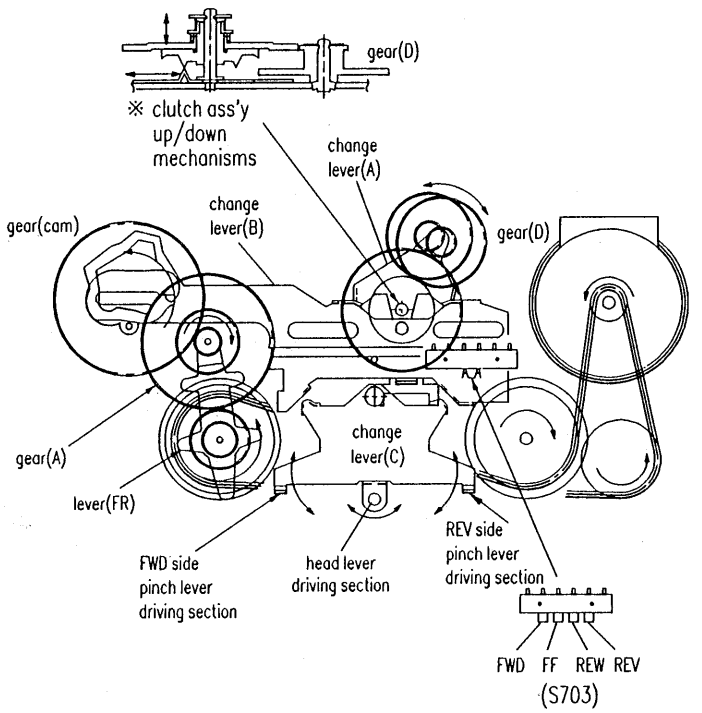


TUNER BOARD — Conductor Side —



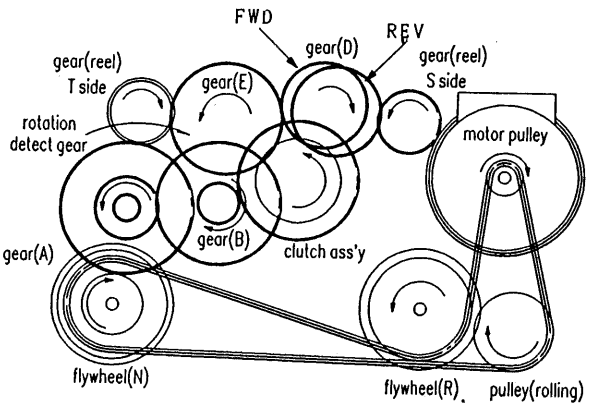
Function of the lever and rotating mechanisms for mode selection

- Mode selection starts when the motor rotates reversely.
- Change lever (B) moves to the left or right when driven with the gear (cam).
- The switch set position of switch S702 (4-position switch) is determined in accordance with the position of Change lever (B). When the switch set position is set appropriately, the motor rotates normally and the tape starts moving.

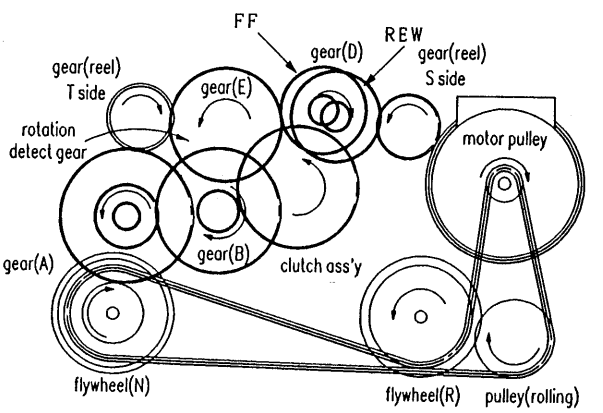


- Lever (FR) is driven with gear (A) by friction, and it swings to the left or right depending on the rotating direction of the motor.
- Selector levers (A) and (C) also swing to the left or right in accordance with the movement of Change lever (B), and the clutch assembly moves upward or downward accordingly.
- The pinch roller is activated and the head is placed in playback position with selector lever (C).
- When the mode is switched from one mode to another, the pinch roller is activated while the motor is rotating reversely (for a short period of time), causing a little slackness in the tape transport.

1. Rotating Mechanisms in PLAY Mode



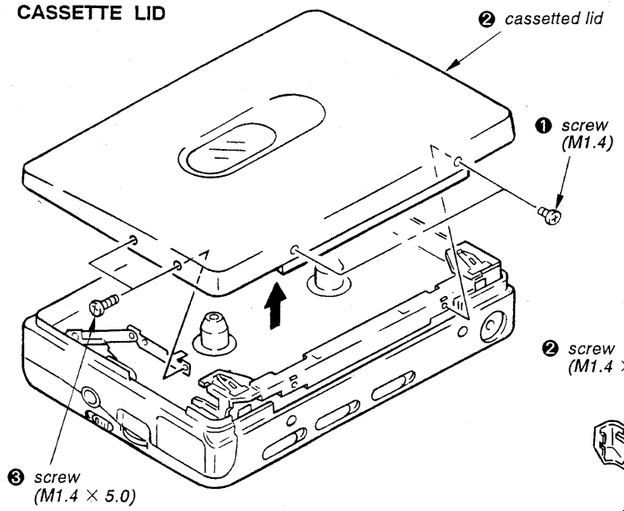
2. Rotating Mechanisms in FF, REW Mode



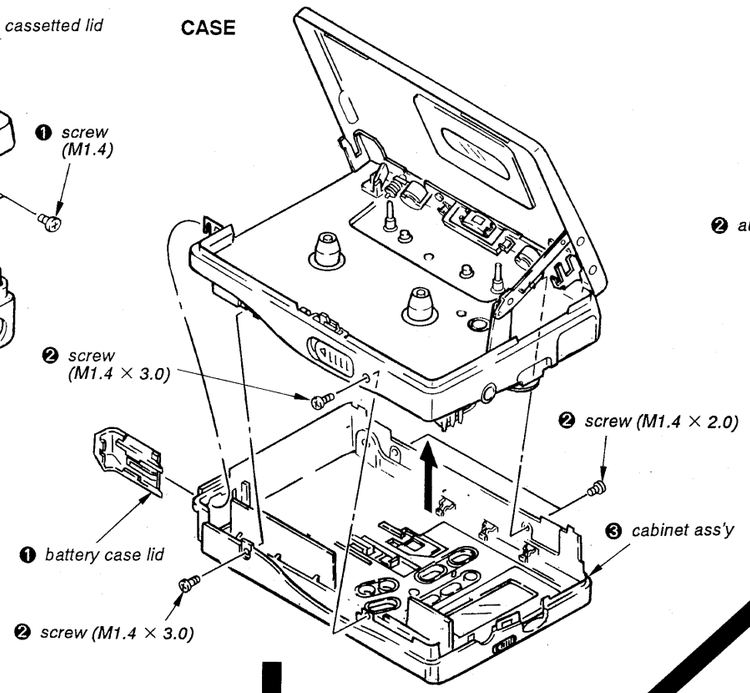
SECTION 3
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

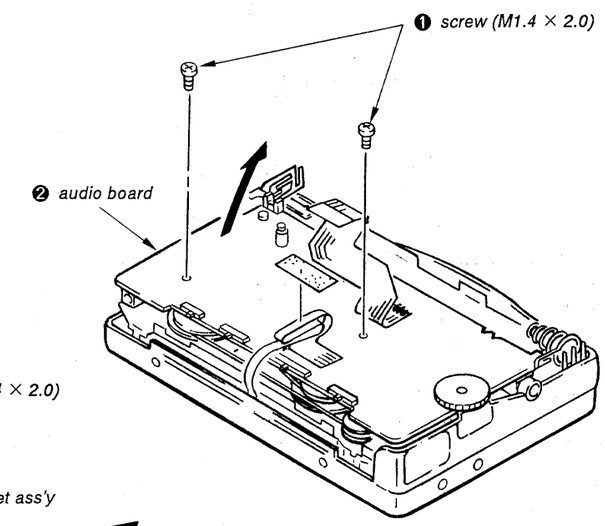
CASSETTE LID



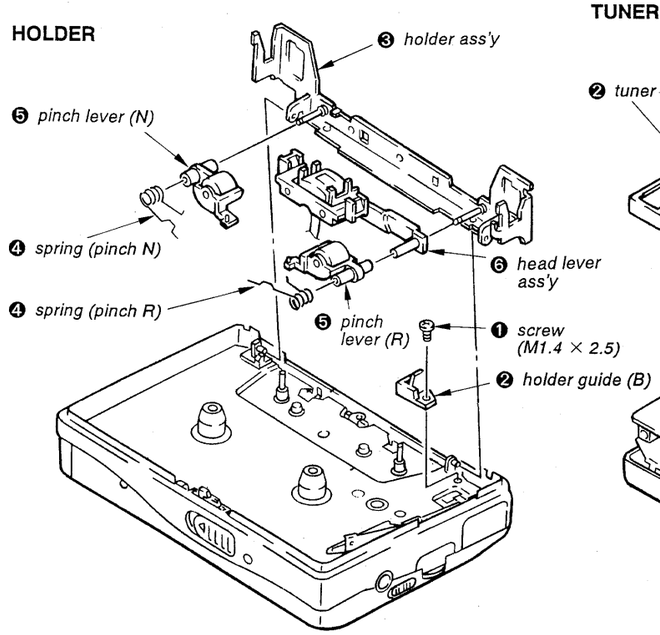
CASE



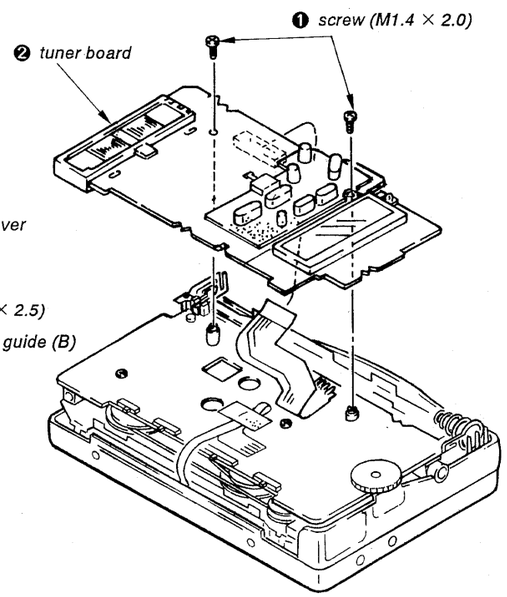
AUDIO BOARD



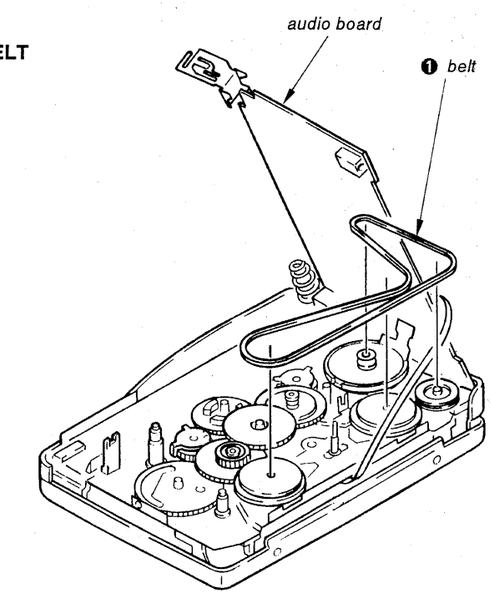
HOLDER



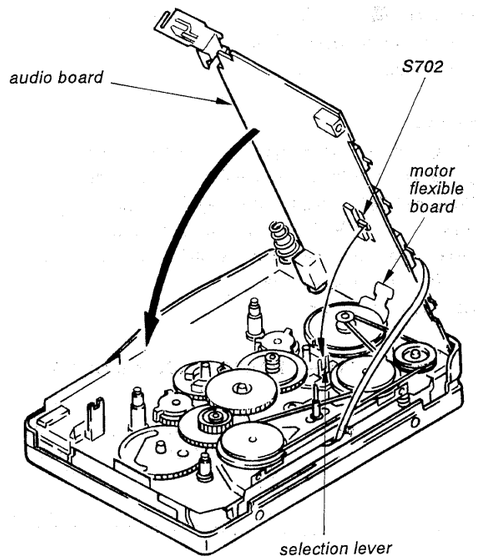
TUNER BOARD



BELT



HOW TO THE AUDIO BOARD



Check that switch S702 is latched with selection lever when carrying out installation of the audio board.

SECTION 4
ADJUSTMENTS

4-1. MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab :
   playback head　　rubber belts
   capstan　　idlers
   pinch roller
2. Demagnetize the playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage (2.5V) unless otherwise noted.

Torque Measurement

Mode	Torque meter	Meter reading
FWD	CQ-102C	20 - 40 g-cm (0.28 - 0.55 oz-inch)
FWD Back Tension		1.0 - 4 g-cm (0.02 - 0.04 oz-inch)
REV	CQ-102RB	20 - 40 g-cm (0.28 - 0.55 oz-inch)
REV Back Tension		1.0 - 3.5 g-cm (0.02 - 0.04 oz-inch)
FF	CQ-201B	more than 50 g-cm (more than 0.70 oz-inch)
REW		more than 50 g-cm (more than 0.70 oz-inch)

Tape Pulling Force Measurement

Mode	Torque meter	Meter reading
FWD	CQ-403A	more than 35 g
REV	CQ-403R	more than 35 g

4-2. ELECTRICAL ADJUSTMENTS

PRECAUTION

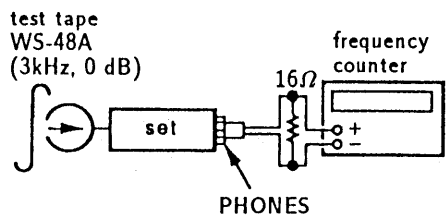
1. Power supply voltage : 2.5V
2. Switch position
   TAPE selection : NORM
   AVLS switch : OFF
   MEGA BASS switch : OFF

Test Tape

Type	Signal	Used for
WS-48A	3 kHz, 0 dB	Tape Speed Adjustment

TAPE SPEED ADJUSTMENT

Procedure :

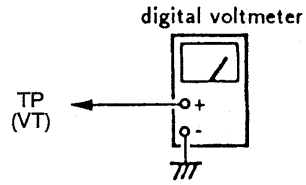


1. Play back WS-48A (tape center portion) in FWD mode. Adjust the RV601 so that the frequency counter reads 3,000 ± 90Hz.
2. Play back WS-48A (tape center portion) in REV mode. Confirm that the reading of frequency counter is within 2.5% from the reading in step 1.

Radio Section

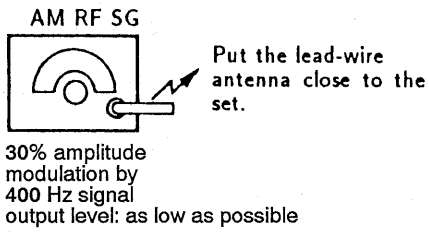
AM SECTION

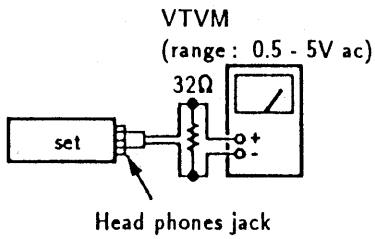
BAND switch : AM



AM TUNING VOLTAGE ADJUSTMNET	
Adjust for following values on digital voltmeter	
Display indication	(530kHz), < 531kHz>
Digital voltmeter reading	1.10 ± 0.05V
Adjustment part	L4

AM Tracking Adjustment


AM RF SG
Put the lead-wire antenna close to the set.
30% amplitude modulation by 400 Hz signal
output level: as low as possible



• Repeat the procedures in each adjustment several times, and the tracking adjustment should be finally done by the trimmer capacitors.

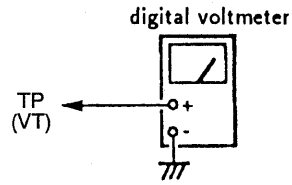
AM TRACKING ADJUSTMENT		
Adjust for a maximum reading on VTVM.		
Display indication	(630kHz), < 621kHz>	(1490kHz), < 1395kHz>
SG frequency		
Adjustment part	L1	CT1

AM IF ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
Display indication	(1,710kHz), < 1,602kHz>
SG frequency	
Adjustment part	T1

FM SECTION

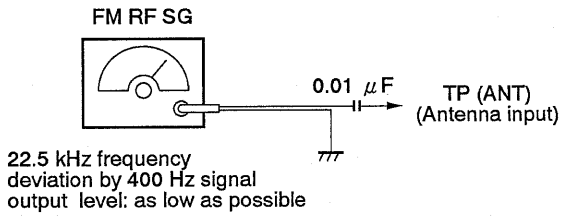
FM Tuning Voltage Adjustment

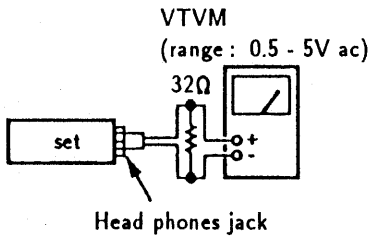
BAND switch : FM



FM TUNING VOLTAGE ADJUSTMNET	
Adjust for following values on digital voltmeter	
Display indication	87.5MHz
Digital voltmeter reading	3.7 ± 0.05V
Adjustment part	L3

FM Tracking Adjustment





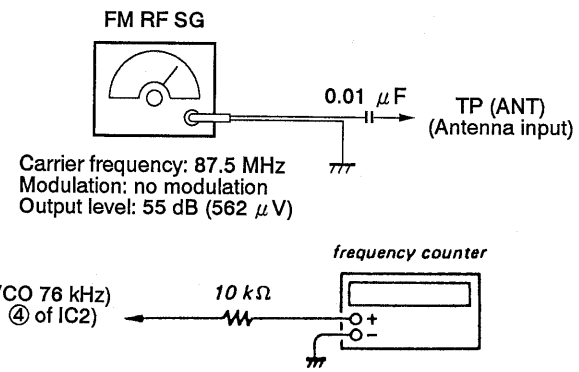
• Repeat the procedures in each adjustment several times, and the tracking adjustment should be finally done by the trimmer capacitors.

FM TRACKING ADJUSTMENT		
Adjust for a maximum reading on VTVM.		
Display indication	87.5MHz	108.00MHz
SG frequency	87.5MHz	108.00MHz
Adjustment part	L2	CT2

( ) : US < > : E

VCO Adjustment

BAND switch: FM
FM SENS switch : ST or DX

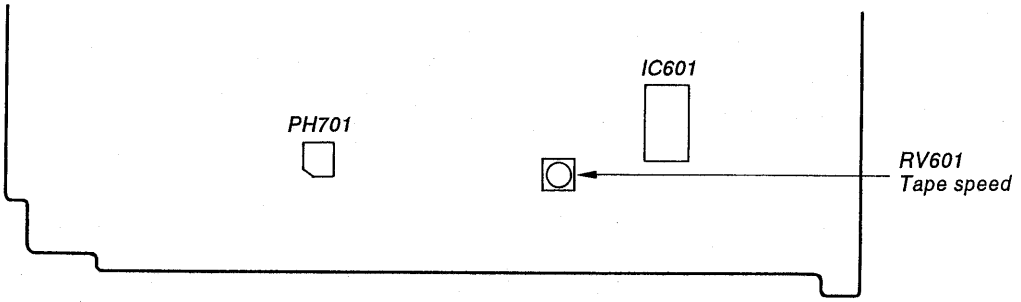


Procedure:

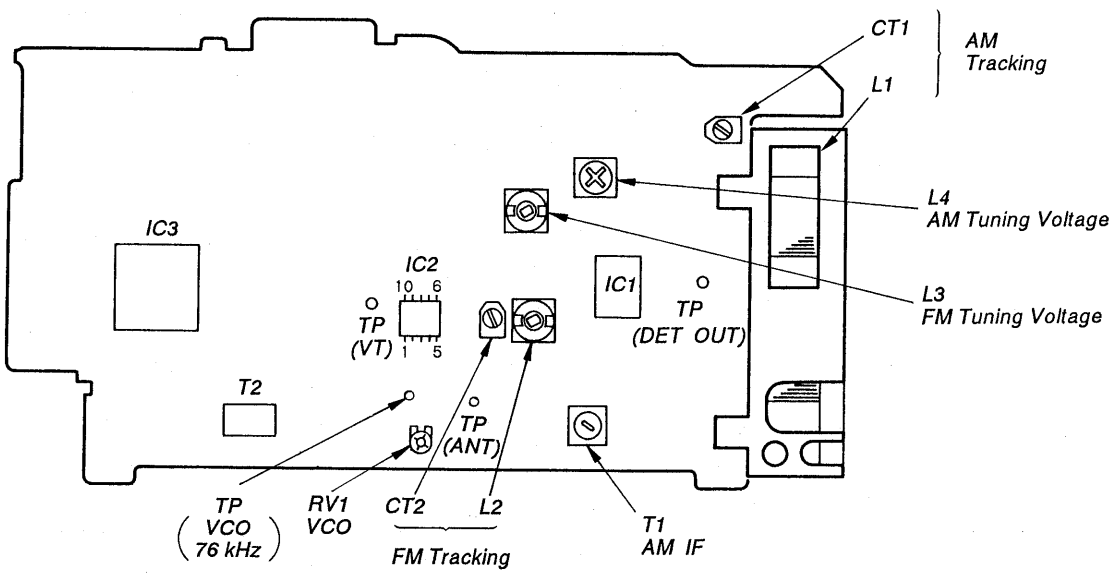
1. Connect an resistor 150 kΩ between TP (VCO 76 kHz) and ground.
2. Tune the set to 87.5 MHz.
3. Adjust RV1 for 76.0 ± 0.3 kHz on the counter.
4. Remove resistor connected in step 1.

Adjustment Parts Location Diagram:

AUDIO BOARD – Side A –



TUNER BOARD – Component Side –



SECTION 5
DIAGRAMS

5-1. IC PIN DESCRIPTION
IC3 μPD1724GB-635-1A7

Pin No.	Symbol	Name of Pin	I/O	Function of Pin
1 ~ 10	LCD10 ~ LCD1	LCD-SEGMENT SIGNAL OUTPUT	O	•The output pin of the signals for the segments of LCD. •Turns VDD from "Low" to "High" when turning power on or resetting. •Set to "Low" automatically when the clock stops. (Display OFF mode)
11	NC	NC	–	Not used
12 ~ 14	COM3 ~ COM1	LCD COMMON SIGNAL OUTPUT	O	•The output pin of the common signal for the LCD.
15 16 17 18	VSS CAP2 CAP1 VSS2	CAPACITOR CONNECTION PIN FOR THE VOLTAGE DOUBLER		•The connection pin to the capacitor of the voltage doubler for the LCD. •Used with a 3.1 V-TYPE LCD to obtain a voltage of 3.1 V.
19	VDP	MUTE		The output pin of the muting signal. Mutes the output to prevent the shock noise or switching noise when tuning, and also the switching noise in the TC mode.
20	CGP	BEEP		The output pin of the buzzer sound signal using CGP. (Selected for 1 kHz or 3 kHz) The buzzer sound is output when: (1) an effective key is checked in the radio ON mode, (2) an effective key is checked in the TC mode, or (3) The frequency selected for new tuning is out of the range. The signal is output for about 65 ms in case of (1). It is output for 50 to 600 ms or 375 to 500 ms in case of (2) or (3) respectively.
21	NC	NC	–	Not used
22	V_{DD}	POWER INPUT		The input pin for power (VDD) of the IC.
23	VHF	–	–	Not used
24	HF	LOCAL OSCILLATOR INPUT	I	The input pin of the FM local oscillator (VCO) output.
25	AM	LOCAL OSCILLATOR INPUT	I	The input pin of the AM local oscillator (VCO) output.
26	VSS1	CND	–	The ground pin of the IC.
27	EO1	–	–	Not used
28	EO2	ERROR OUT	O	The output pin of the PLL errors. The output level is "High" when the frequency demultiplied from the local oscillator output is higher than the reference frequency. It is "Low when the frequency is lower.
29	CE	CHIP ENABLE		The input pin to enable or disable the IC. To be set to "High" to enable the IC. To be set to "Low" to disable the IC.
30 31	X2 X1	CRYSTAL (X'tal)	O I	The connection pin to the crystal. The resonant frequency of the crystal is 75 kHz.
32	VSS4	REGULATOR CONNECTION FOR THE OSCILLATOR	–	The connection pin to the capacitor of the regulator circuit.
33	PA3	PHOTOSENSOR SIGNAL INPUT		The input pin of the photosensor output for reel-table rotation detection. The duration of the output when detecting the end of tape is 1.6 s for PLAY, and 500 ms for FF/REW.
34	PA2	AMP CTL SIGNAL OUTPUT		The output pin to turn on the power amplifier. Turns on when set to "High".
35	PA2	AM BAND SIGNAL OUTPUT		The output pin of the AM band signal in the radio mode. Selects AM when set to "High, and FM when set to "Low".
36	PA0	RADIO ON POWER		The output pin of a "High" level status when radio is turned on. To be used possibly as the PRE-MUTE signal output.
37	PB3	MOTOR BRAKE		The output pin for the brake signal to be applied to the motor. Turns the brake on when set to "High".

Pin No.	Symbol	Name of Pin	I/O	Function of Pin
38	PB2	MOTER DIR		The output pin for selecting the rotating direction of the motor. Turns the motor counterclockwise when set to "High", and clockwise when set to "Low".
39	PB1	MOTOR CONTROL		The output pin for the signal to start the motor. Turns the motor when set to "High".
40 41 42 43 44	PB0 PC3 PC2 PC1 PC0	KEY SOURCE SIGNAL INPUT		The output pin of the key source signal. PC3/PC2/PC1/PC0 are for the momentary keys, and PB0 for the initial diode.
45 46 47 48	K3 K2 K1 K0	KEY RETURN SIGNAL INPUT		The output pin of the key return signal. To be used with PB0/PC3/PC2/PC1/PC0.
49 50	NC	NC	–	Not used
51 ~ 56	LCD16 ~ LCD11	LCD-SEGMENT SIGNAL OUTPUT	O	The output pin of the signal for the segments of the LCD.

Key Matrix Arrangement

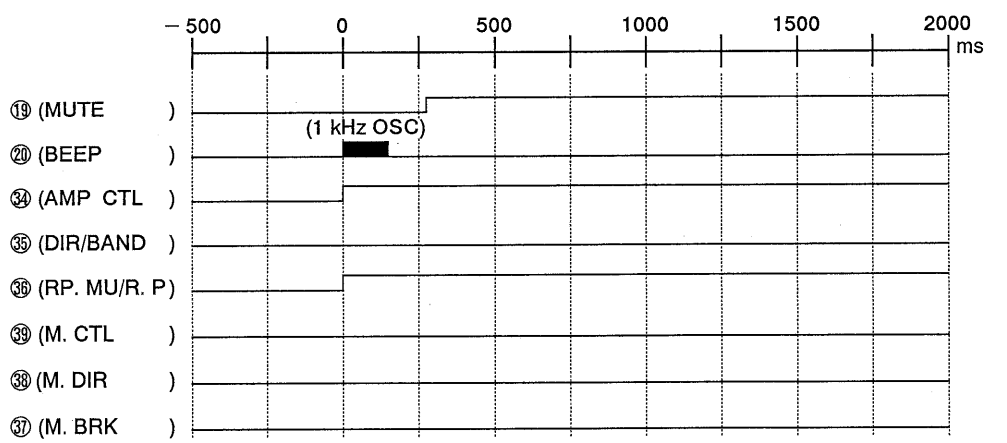
INPUT / OUTPUT	KO	K1	K2	K3
PCO	ENTER	SCAN UP	SCAN DOWN	ON/BAND
PC1	REW/PRESET(−)	FF/PRESET(+)	PLAY	STOP
PC2	FWD(MD)	FF(MD)	REW(MD)	RVS(MD)
PC3	HOLD	Comparator (1)	Comparator (2)	Comparator (3)

Initial diode

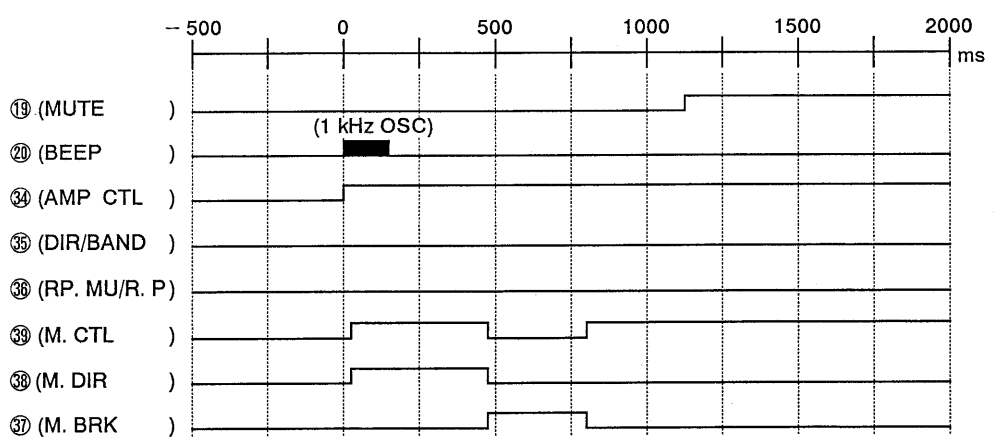
INPUT / OUTPUT	KO	K1	K2	K3
PBO	AAO	TAPE(MD)	AA2	AA3

The initial diode is used when VDD turns from "Low" to "High".
For the input of comparator (1) when AAO is used.
For the input of the HOLD status when AAO is not used.

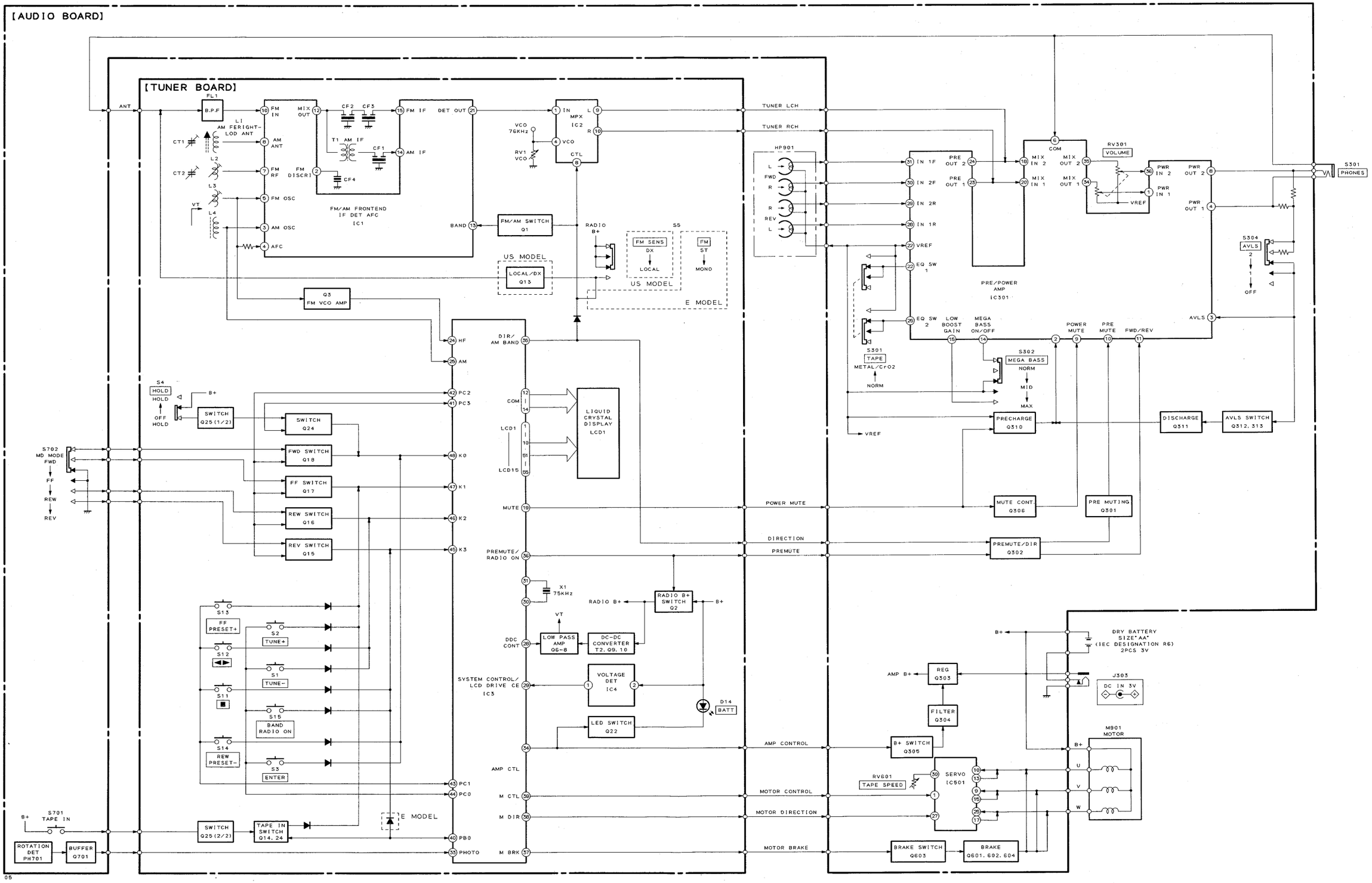
Set to RADIO ON (FM reception) when the BAND key is pressed in the stop mode.



Set to PLAY (FWD direction) when the PLAY key is pressed in the stop mode.



5-2. BLOCK DIAGRAM



5-3. TUNER SECTION PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAM

• See page 29 for Semiconductor Lead Layouts and page 27 for IC Block Diagrams.

• Semiconductor Location

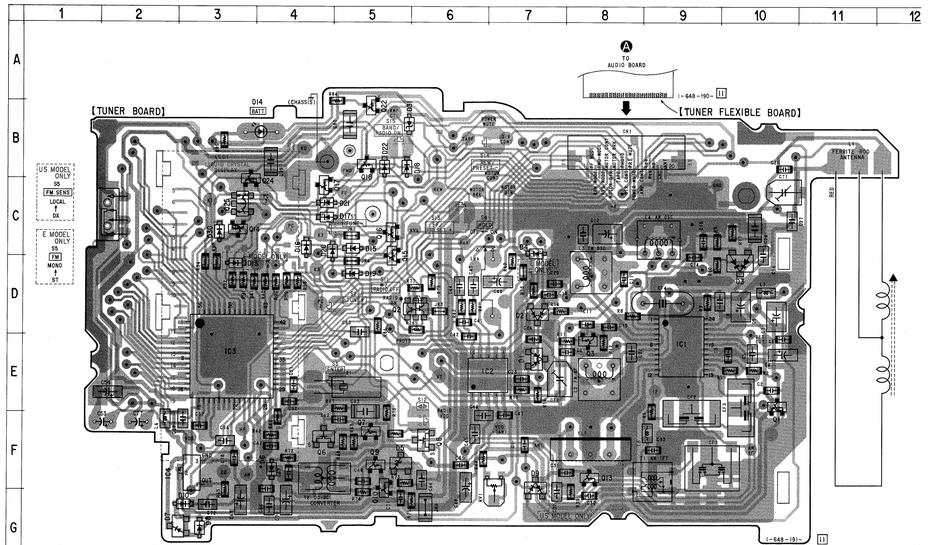
Ref. No.	Location
D1	E-7
D2	D-7
D3	D-10
D4	C-7
D5	F-5
D6	F-4
D7	G-2
D8	G-3
D9	F-7
D10	G-3
D13	D-3
D14	B-4
D15	C-5
D16	C-4
D17	C-4
D18	B-5
D19	D-5
D20	C-4
D21	C-4
D22	B-5
D30	C-3
D31	B-5
IC1	E-9
IC2	E-6
IC3	E-3
IC4	F-3
Q1	E-10
Q2	D-5
Q3	E-8
Q6	F-4
Q7	F-5
Q8	F-6
Q9	F-5
Q10	F-5
Q13	F-8
Q14	C-3
Q15	C-5
Q16	C-5
Q17	C-4
Q18	B-5
Q22	B-5
Q24	C-3
Q25	C-3

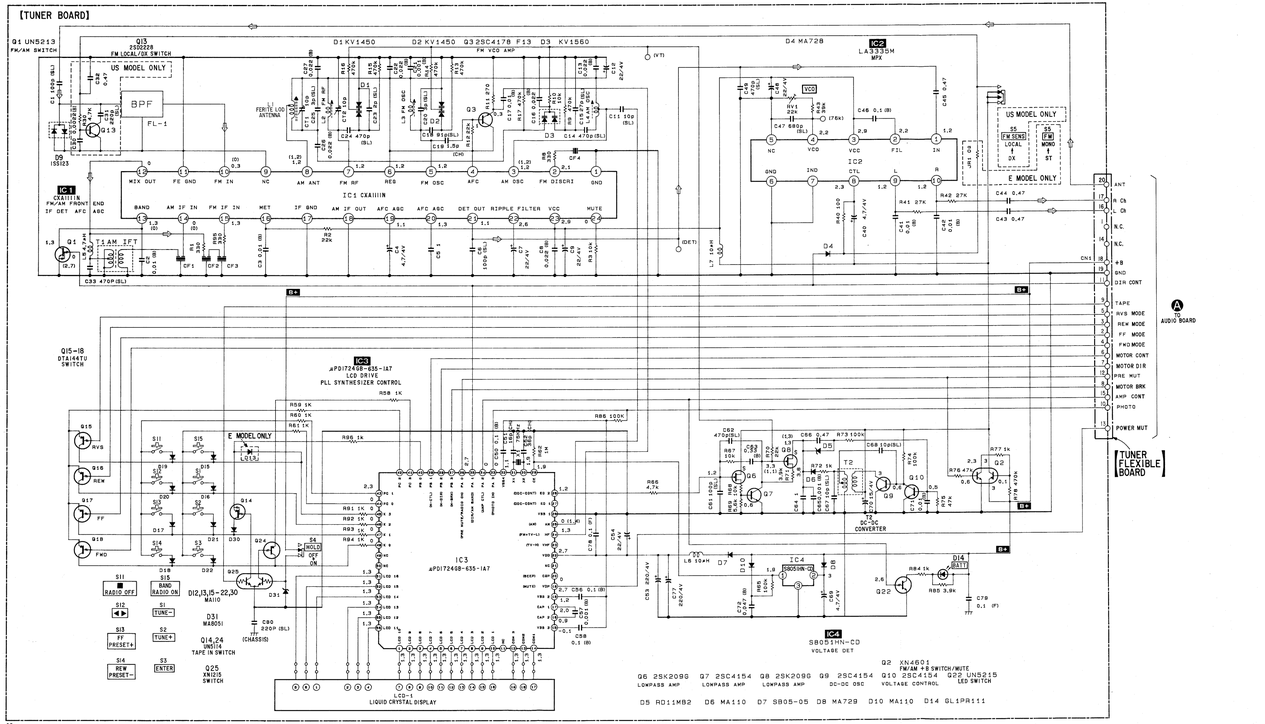
Note on Printed Wiring Board:

- ▭ : indicates side identified with part number.
- ● : Through hole.
- ▭ : Pattern of the rear side.
- ▭ : Pattern from the side which enables seeing.

Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- B+ : B+ Line.
- ▭ : panel designation.
- ▭ : adjustment for repair.
- Power voltage is dc 3.0 V and fed with regulated dc power supply from external power voltage jack.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark :FM
  ( ) :AM
- Voltages are taken with a VOM (10 MΩ/V).
  Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM



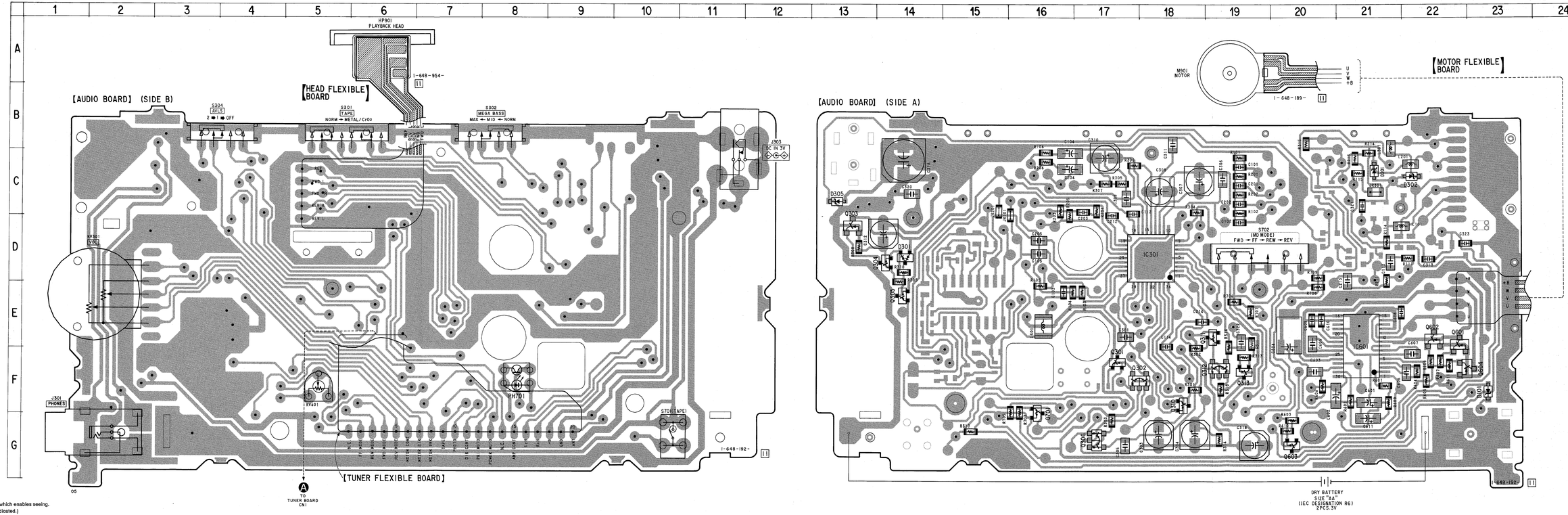


5-4. AUDIO SECTION PRINTED WIRING BOARDS

• See page 29 for Semiconductor Lead Layouts.

• Semiconductor Location

Ref. No.	Location
D101	F-23
D201	C-21
D301	D-14
D302	C-21
D305	C-13
IC301	D-17
IC601	E-21
PH701	F-16
Q301	F-17
Q302	F-17
Q303	D-13
Q304	D-13
Q305	E-14
Q306	G-17
Q310	F-18
Q311	E-18
Q312	F-18
Q313	F-19
Q601	E-22
Q602	E-22
Q603	G-20
Q604	F-22
Q701	F-16

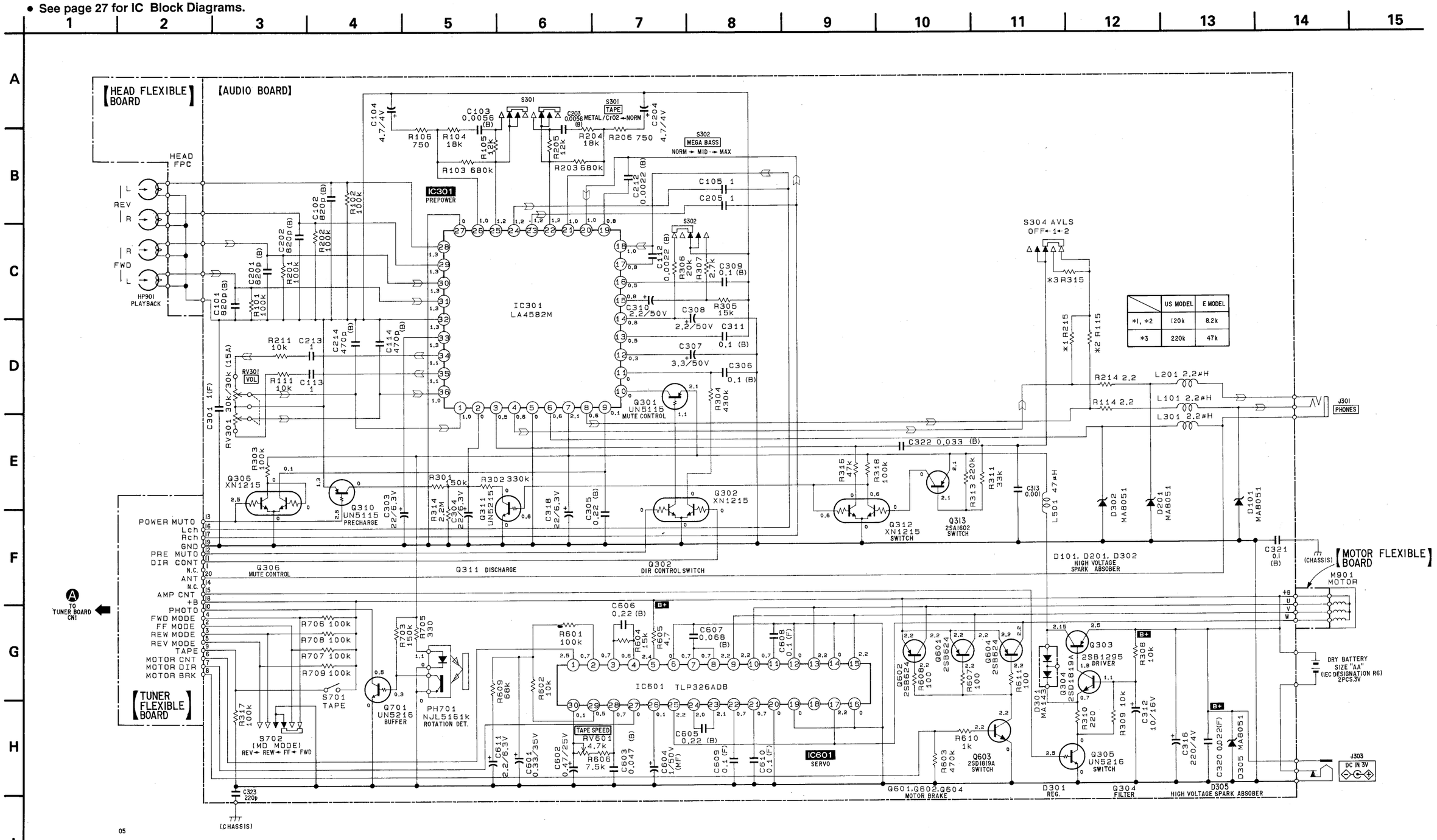


Note:
- ● : Through hole.
- : Pattern from the side which enables seeing.

(The other layers' patterns are not indicated.)

5-5. AUDIO SECTION SCHEMATIC DIAGRAM

• See page 27 for IC Block Diagrams.

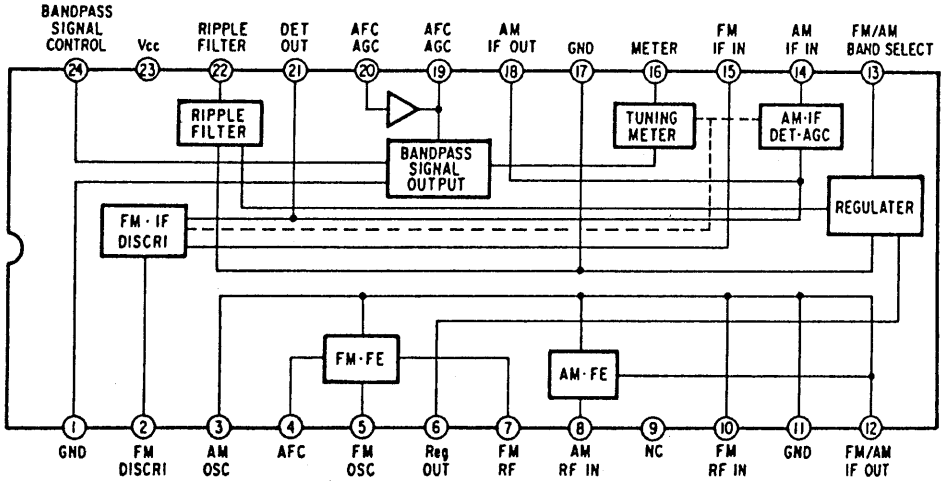


Note:

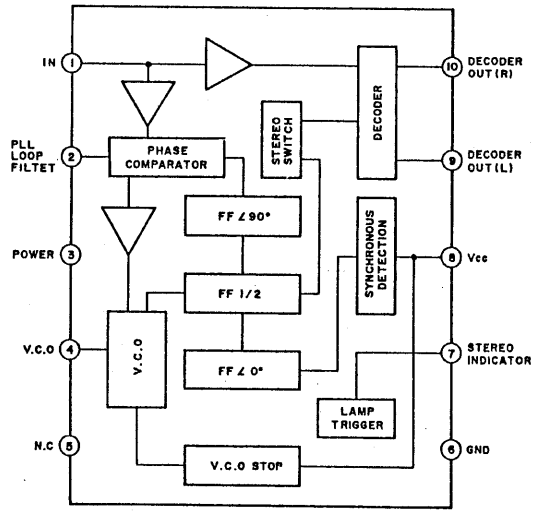
- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- B+ : B + Line.
- ▭ : panel designation.
- ▭ : adjustment for repair.
- Power voltage is dc 2.5 V and fed with regulated dc power supply from external power voltage jack.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : PLAY
- Voltages are taken with a VOM (10 MΩ/V).
  Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM
  ⇨ : PB

• **IC Block Diagrams**

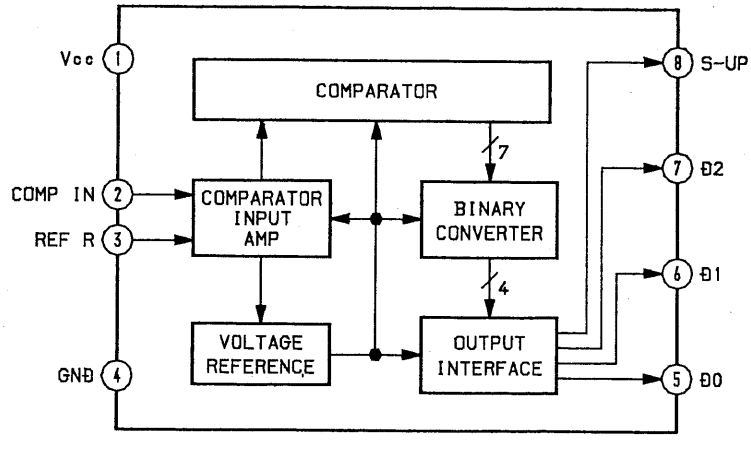
IC1 CXA1111N



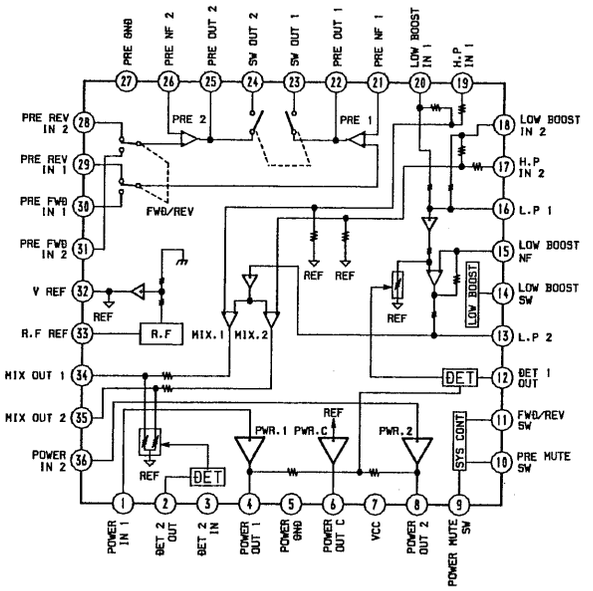
IC2 LA3335M



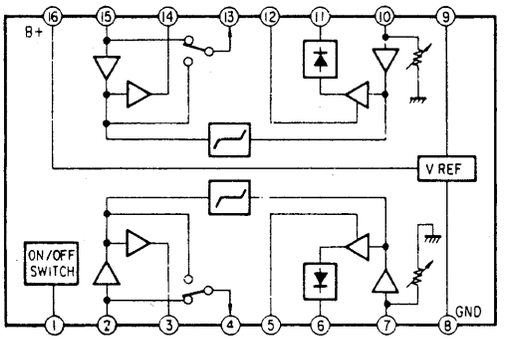
IC5 CXA1405AM



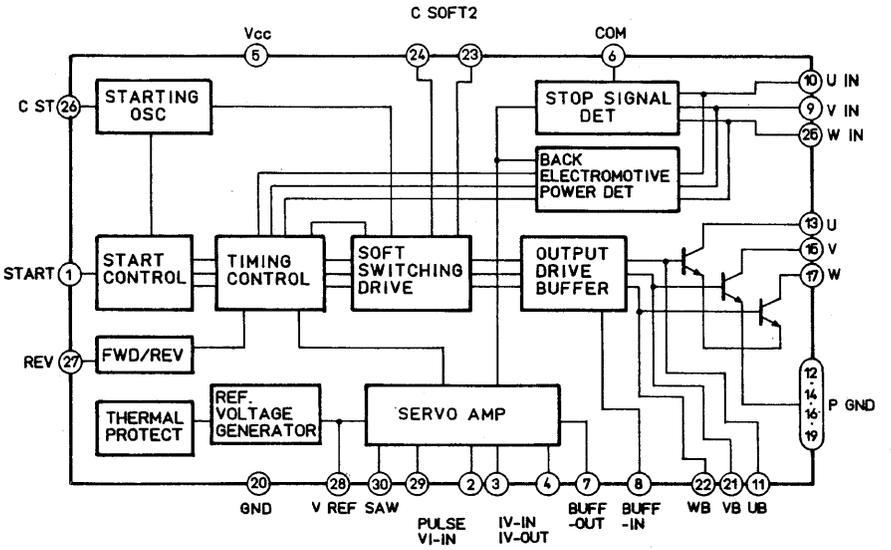
IC301 LA4582M



IC302 NJM2063AM

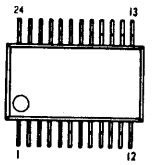


IC601 TLP326ADB



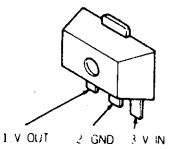
• Semiconductor Lead Layouts

CXA1111N

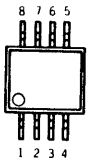


(TOP VIEW)

S-8051HN-CD-S

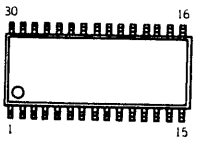


CXA1405AM



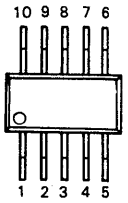
(TOP VIEW)

TLP326ADB

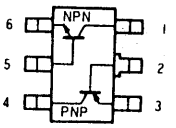


TOP VIEW

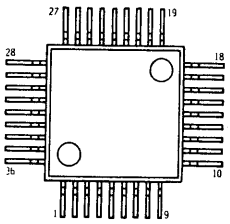
LA3335M



XN4601

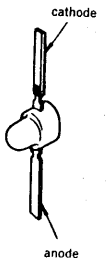


LA4582M

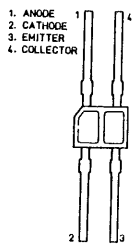


MARKING SIDE VIEW

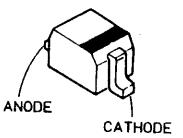
GL-1PR102



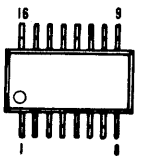
NJL5161K-F1-B



MA110

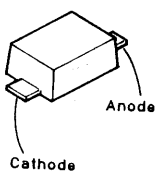


NJM2063AM



(TOP VIEW)

MA728
MA729
MA8051

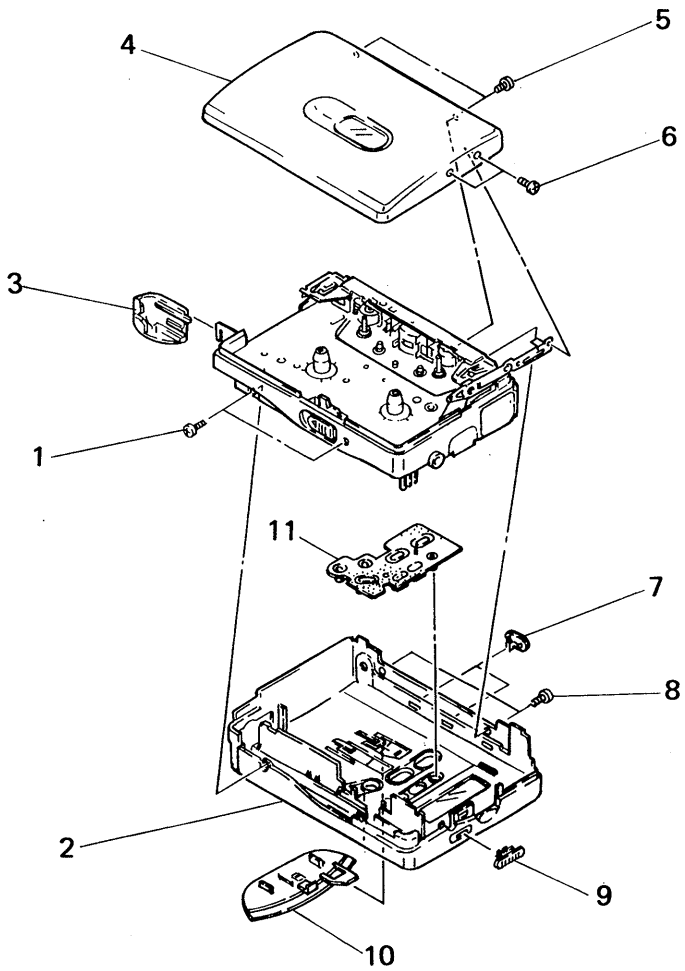


SECTION 6
EXPLODED VIEWS

NOTE:

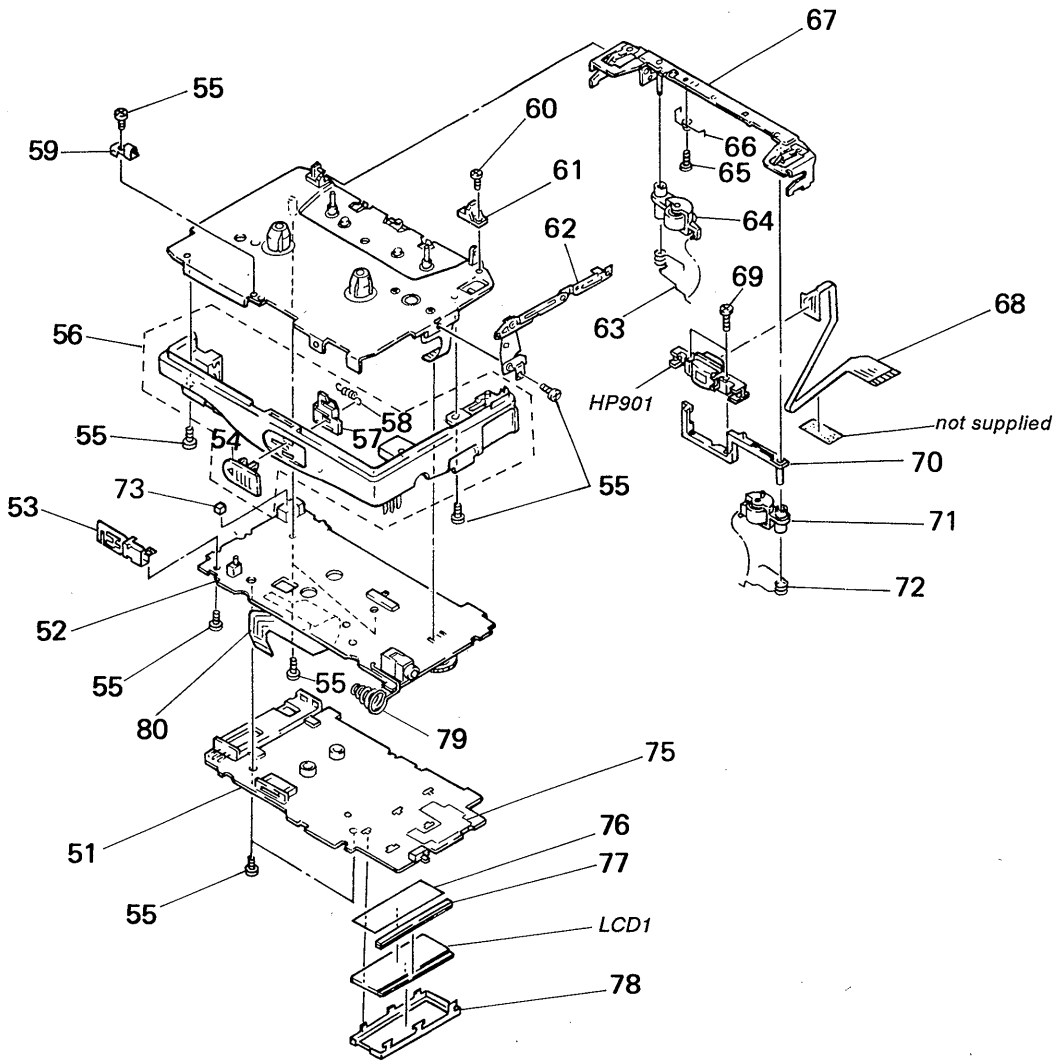
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.

(1) CABINET SECTION



Ref. No.	Part No.	Description	Remark
1	3-704-197-33	SCREW (M1.4X3.0), LOCKING	
2	X-3366-715-1	CABINET ASSY (E)	
2	X-3366-717-1	CABINET ASSY (US)	
3	3-389-311-01	LID (CF-1), BATTERY CASE	
4	X-3366-672-1	LID ASSY, CASSETTE	
5	3-365-630-31	SCREW (M1.4)	
6	3-704-197-82	SCREW (M1.4X5.0), LOCKING	
7	3-388-914-01	KNOB (EQ)	
8	3-704-197-13	SCREW (M1.4X2.0), LOCKING	
9	3-388-915-01	KNOB (L/D)	
10	3-388-937-01	KNOB (HOLD)	
11	1-692-511-11	CONTACT, RUBBER	

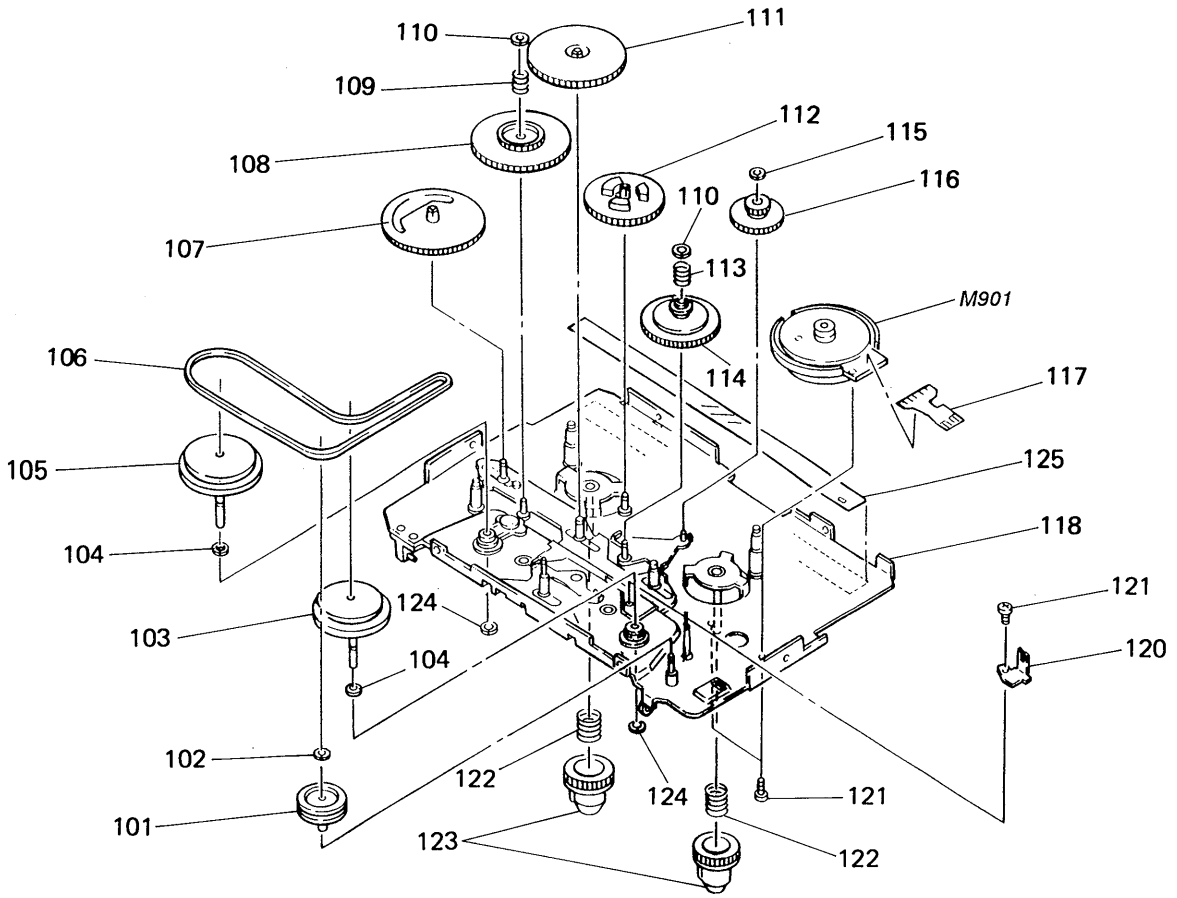
(2) MECHANISM SECTION-1 (MF-WMFX52-60)



Ref. No.	Part No.	Description	Remark
51	A-3016-382-A	TUNER BOARD, COMPLETE (US)	
51	A-3016-397-A	TUNER BOARD, COMPLETE (E)	
52	A-3016-381-A	AUDIO BOARD, COMPLETE (US)	
52	A-3016-406-A	AUDIO BOARD, COMPLETE (E)	
53	X-3366-675-1	TERMINAL ASSY, BATTERY	
54	3-388-929-01	KNOB (OPEN)	
55	3-704-197-11	SCREW (M1.4X2.0), LOCKING	
56	X-3366-674-1	ORNAMENT ASSY, REEL	
57	3-388-930-01	SLIDER, OPEN	
58	3-388-931-01	SPRING, TENSION	
59	3-388-920-01	SPRING, CASSETTE RETAINER	
60	3-704-197-21	SCREW (M1.4X2.5), LOCKING	
61	3-386-704-01	GUIDE (B), HOLDER	
62	X-3366-673-1	ARM ASSY, CLICK	
63	3-386-684-01	SPRING (PINCH N)	
64	X-3366-298-1	PINCH LEVER (N) ASSY	
65	7-627-553-17	PRECISION SCREW +P 2X2 TYPE 3	

Ref. No.	Part No.	Description	Remark
66	3-386-683-01	SPRING (H)	
67	X-3366-299-1	HOLDER ASSY	
68	1-648-954-11	HEAD FLEXIBLE BOARD	
69	3-704-413-31	SCREW (M1.4X7.2)	
* 70	3-386-646-01	LEVER, HEAD	
71	X-3366-296-1	PINCH LEVER (R) ASSY	
72	3-386-685-01	SPRING (PINCH R)	
73	3-831-441-11	CUSHION (B)	
75	1-648-462-11	SHIELD FLEXIBLE BOARD	
76	3-388-936-21	SPACER, LCD	
77	1-537-537-11	CONDUCTIVE BOARD, CONNECTION	
78	3-388-940-01	BRACKET, LCD	
79	3-388-927-01	SPRING, BATTERY COIL	
80	1-648-190-11	TUNER FLEXIBLE BOARD	
HP901	1-500-046-11	HEAD, MAGNETIC (PLAYBACK)	
LCD1	1-810-098-11	PISPLAY PANEL, LIQUID CRYSTAL	

(3) MECHANISM SECTION-2 (MF-WMFX52-60)



Ref. No.	Part No.	Description	Remark
101	3-386-711-01	PULLEY (REVERSE)	
102	3-338-645-21	WASHER (0.8-2.5)	
103	X-3366-297-1	WHEEL (R) ASSY, CAPSTAN	
104	3-386-694-01	WASHER	
105	X-3366-294-1	WHEEL (N) ASSY, CAPSTAN	
106	3-388-079-01	BELT	
107	3-386-852-01	GEAR (CAM)	
108	3-386-631-01	GEAR (A)	
109	3-904-228-01	SPRING, COMPRESSION	
110	3-348-953-11	WASHER	
111	3-386-691-01	GEAR (B)	
112	3-389-513-01	GEAR (PH)	
113	3-904-227-01	SPRING, COMPRESSION	

Ref. No.	Part No.	Description	Remark
114	X-3366-293-1	CLUTCH ASSY	
115	3-338-645-31	WASHER (0.8-2.5)	
116	3-386-632-01	GEAR (D)	
117	1-648-189-11	MOTOR FLEXIBLE BOARD	
118	X-3366-760-1	CHASSIS ASSY (BCF)	
120	3-388-918-01	LEVER, SELECTION	
121	3-349-825-41	SCREW	
122	3-386-662-01	SPRING, COMPRESSION	
123	3-386-634-01	GEAR (REEL)	
124	3-325-394-01	WASHER, STOPPER	
* 125	3-388-921-01	SHEET, INSULATING	
M901	1-698-124-11	MOTOR, DC	

SECTION 7
ELECTRICAL PARTS LIST

AUDIO

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
	A-3016-381-A	AUDIO BOARD, COMPLETE (US)			
		**********			
	A-3016-406-A	AUDIO BOARD, COMPLETE (E)			
		**********			
	1-648-190-11	TUNER FLEXIBLE BOARD			
*	3-329-460-01	SPACER			
	3-388-927-01	SPRING, BATTERY COIL			
	3-704-197-11	SCREW (M1.4X2.0), LOCKING			
		< CAPACITOR >			
C101	1-164-473-11	CERAMIC CHIP	820PF	10%	50V
C102	1-164-473-11	CERAMIC CHIP	820PF	10%	50V
C103	1-164-172-11	CERAMIC CHIP	0.0056uF	10%	25V
C104	1-135-151-21	TANTALUM CHIP	4.7uF	20%	4V
C105	1-164-234-11	CERAMIC CHIP	1uF		10V
C112	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C113	1-164-234-11	CERAMIC CHIP	1uF		10V
C114	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C201	1-164-473-11	CERAMIC CHIP	820PF	10%	50V
C202	1-164-473-11	CERAMIC CHIP	820PF	10%	50V
C203	1-164-172-11	CERAMIC CHIP	0.0056uF	10%	25V
C204	1-135-151-21	TANTALUM CHIP	4.7uF	20%	4V
C205	1-164-234-11	CERAMIC CHIP	1uF		10V
C212	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C213	1-164-234-11	CERAMIC CHIP	1uF		10V
C214	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C301	1-164-234-11	CERAMIC CHIP	1uF		10V
C303	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C304	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C305	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C306	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C307	1-126-602-11	ELECT CHIP	3.3uF	20%	50V
C308	1-126-601-11	ELECT CHIP	2.2uF	20%	50V
C309	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C310	1-126-601-11	ELECT CHIP	2.2uF	20%	50V
C311	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C313	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V
C312	1-126-604-11	ELECT	10uF	20%	16V
C316	1-126-246-11	ELECT CHIP	220uF	20%	4V
C318	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C320	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C321	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C322	1-163-989-11	CERAMIC CHIP	0.033MF	10%	25V
C323	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C601	1-135-073-00	TANTALUM CHIP	0.33uF	10%	35V
C602	1-135-145-11	TANTALUM CHIP	0.47uF	10%	35V
C603	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C604	1-128-049-11	ELECT CHIP	1uF	0	50V
C605	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C606	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C607	1-164-344-11	CERAMIC CHIP	0.068uF	10%	25V
C608	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C609	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C610	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C611	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V
		< DIODE >			
D101	8-719-422-37	DIODE MA8051			
D201	8-719-422-37	DIODE MA8051			
D301	8-719-800-76	DIODE 1SS226			
D302	8-719-422-37	DIODE MA8051			
D305	8-719-422-37	DIODE MA8051			
		< IC >			
IC301	8-759-161-54	IC LA4582M			
IC601	8-759-996-13	IC TLP326ADB			
		< JACK >			
J301	1-565-287-11	JACK (PHONES)			
J303	1-750-061-11	JACK, DC (POLARITY UNIFIED TYPE)			

AUDIO

Ref. No.	Part No.	Description			Remark
		< JUMPER RESISTOR >			
JR101	1-216-864-11	METAL CHIP	0	5%	1/16W
JR201	1-216-864-11	METAL CHIP	0	5%	1/16W
JR301	1-216-295-00	METAL CHIP	0	5%	1/10W
		< COIL >			
L101	1-410-997-31	INDUCTOR CHIP	2.2uH		
L201	1-410-997-31	INDUCTOR CHIP	2.2uH		
L301	1-410-997-31	INDUCTOR CHIP	2.2uH		
L501	1-412-031-11	INDUCTOR CHIP	47uH		
		< PHOTO INTERRUPTER >			
PH701	8-759-710-38	IC NJL5161K-F1-B			
		< TRANSISTOR >			
Q301	8-729-420-53	TRANSISTOR UN5115			
Q302	8-729-403-17	TRANSISTOR XN1215			
Q303	8-729-807-87	TRANSISTOR 2SB1295-UL6			
Q304	8-729-402-32	TRANSISTOR 2SD1819A-R			
Q305	8-729-421-26	TRANSISTOR UN5216			
Q306	8-729-403-17	TRANSISTOR XN1215			
Q310	8-729-420-53	TRANSISTOR UN5115			
Q311	8-729-420-50	TRANSISTOR UN5215			
Q312	8-729-403-17	TRANSISTOR XN1215			
Q313	8-729-602-36	TRANSISTOR 2SA1602-F			
Q601	8-729-141-48	TRANSISTOR 2SB624-BV345			
Q602	8-729-141-48	TRANSISTOR 2SB624-BV345			
Q603	8-729-402-32	TRANSISTOR 2SD1819A-R			
Q604	8-729-141-48	TRANSISTOR 2SB624-BV345			
Q701	8-729-421-26	TRANSISTOR UN5216			
		< RESISTOR >			
R101	1-216-845-11	METAL CHIP	100K	5%	1/16W
R102	1-216-845-11	METAL CHIP	100K	5%	1/16W
R103	1-216-855-11	METAL CHIP	680K	5%	1/16W
R104	1-216-836-11	METAL CHIP	18K	5%	1/16W
R105	1-216-834-11	METAL CHIP	12K	5%	1/16W
R106	1-218-484-11	METAL GLAZE	750	5%	1/16W
R111	1-216-833-11	METAL CHIP	10K	5%	1/16W
R114	1-216-789-11	METAL CHIP	2.2	5%	1/16W
R115	1-216-832-11	METAL CHIP	8.2K	5%	1/16W (E)
R115	1-216-846-11	METAL CHIP	120K	5%	1/16W (US)
R201	1-216-845-11	METAL CHIP	100K	5%	1/16W
R202	1-216-845-11	METAL CHIP	100K	5%	1/16W
R203	1-216-855-11	METAL CHIP	680K	5%	1/16W
R204	1-216-836-11	METAL CHIP	18K	5%	1/16W
R205	1-216-834-11	METAL CHIP	12K	5%	1/16W
R206	1-218-484-11	METAL GLAZE	750	5%	1/16W

Ref. No.	Part No.	Description			Remark
R211	1-216-833-11	METAL CHIP	10K	5%	1/16W
R214	1-216-789-11	METAL CHIP	2.2	5%	1/16W
R215	1-216-832-11	METAL CHIP	8.2K	5%	1/16W (E)
R215	1-216-846-11	METAL CHIP	120K	5%	1/16W (US)
R301	1-216-847-11	METAL CHIP	150K	5%	1/16W
R302	1-216-839-11	METAL GLAZE	33K	5%	1/16W
R303	1-216-845-11	METAL CHIP	100K	5%	1/16W
R304	1-218-448-11	METAL GLAZE	430K	5%	1/16W
R305	1-216-835-11	METAL CHIP	15K	5%	1/16W
R306	1-218-292-11	METAL GLAZE	20K	5%	1/16W
R307	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R308	1-216-833-11	METAL CHIP	10K	5%	1/16W
R309	1-216-833-11	METAL CHIP	10K	5%	1/16W
R310	1-216-813-11	METAL CHIP	220	5%	1/16W
R311	1-216-839-11	METAL GLAZE	33K	5%	1/16W
R313	1-216-025-11	METAL GLAZE	100	5%	1/10W
R314	1-216-861-11	METAL CHIP	2.2M	5%	1/16W
R315	1-216-841-11	METAL CHIP	47K	5%	1/16W (E)
R315	1-216-849-11	METAL CHIP	220K	5%	1/16W
R316	1-216-841-11	METAL CHIP	47K	5%	1/16W
R317	1-216-845-11	METAL CHIP	100K	5%	1/16W
R318	1-216-845-11	METAL CHIP	100K	5%	1/16W
R601	1-216-845-11	METAL CHIP	100K	5%	1/16W
R602	1-216-833-11	METAL CHIP	10K	5%	1/16W
R603	1-216-853-11	METAL CHIP	470K	5%	1/16W
R604	1-216-835-11	METAL CHIP	15K	5%	1/16W
R605	1-216-793-11	METAL GLAZE	4.7	5%	1/16W
R606	1-218-344-11	METAL GLAZE	7.5K	5%	1/16W
R607	1-216-809-11	METAL CHIP	100	5%	1/16W
R608	1-216-809-11	METAL CHIP	100	5%	1/16W
R609	1-216-843-11	METAL CHIP	68K	5%	1/16W
R610	1-216-821-11	METAL CHIP	1K	5%	1/16W
R611	1-216-809-11	METAL CHIP	100	5%	1/16W
R703	1-216-847-11	METAL CHIP	150K	5%	1/16W
R705	1-216-815-11	METAL CHIP	330	5%	1/16W
R706	1-216-845-11	METAL CHIP	100K	5%	1/16W
R707	1-216-845-11	METAL CHIP	100K	5%	1/16W
R708	1-216-845-11	METAL CHIP	100K	5%	1/16W
R709	1-216-845-11	METAL CHIP	100K	5%	1/16W
		< VARIABLE RESISTOR >			
RV301	1-223-414-11	RES, VAR, CARBON			
RV601	1-237-723-11	RES, ADJ, CARBON 4.7K			
		< SWITCH >			
S301	1-571-277-31	SWITCH, SLIDE			
S302	1-571-506-41	SWITCH, SLIDE			
S304	1-571-506-41	SWITCH, SLIDE			
S701	1-692-509-11	SWITCH, PUSH			

Ref. No.	Part No.	Description			Remark
S702	1-692-370-11	SWITCH, SLIDE			
**********					
	A-3016-382-A	TUNER BOARD, COMPLETE (US)			
		**********			
	A-3016-397-A	TUNER BOARD, COMPLETE (E)			
		**********			
	1-537-537-11	CONDUCTIVE BOARD, CONNECTION			
	1-648-462-11	SHIELD FLEXIBLE BOARD			
	3-388-936-21	SPACER, (LCD)			
*	3-388-940-01	BRACKET, LCD			
		< CAPACITOR >			
C1	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C2	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C3	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C4	1-135-151-21	TANTALUM CHIP	4.7uF	20%	4V
C5	1-164-346-11	CERAMIC CHIP	1uF		16V
C6	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C7	1-135-202-21	TANTAL. CHIP	22uF	20%	4V
C8	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C9	1-135-202-21	TANTAL. CHIP	22uF	20%	4V
C11	1-162-941-11	CERAMIC CHIP	10PF	0.5PF	50V
C12	1-135-202-21	TANTAL. CHIP	22uF	20%	4V
C13	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C14	1-164-362-11	CERAMIC CHIP	470PF	5%	50V
C15	1-162-946-11	CERAMIC CHIP	27PF	5%	50V
C16	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C17	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C18	1-164-461-11	CERAMIC CHIP	91PF	5%	50V
C19	1-162-906-91	CERAMIC CHIP	1.5PF	0.25PF	50V
C20	1-162-934-11	CERAMIC CHIP	3PF	0.25PF	50V
C21	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C22	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C23	1-162-932-11	CERAMIC CHIP	2PF	0.25PF	50V
C24	1-164-362-11	CERAMIC CHIP	470PF	5%	50V
C25	1-162-934-11	CERAMIC CHIP	3PF	0.25PF	50V
C26	1-163-063-00	CERAMIC CHIP	0.022uF	10%	50V
C27	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C30	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C31	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C32	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C33	1-164-362-11	CERAMIC CHIP	470PF	5%	50V
C40	1-135-151-21	TANTALUM CHIP	4.7uF	20%	4V
C41	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C42	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C43	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C44	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C45	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C46	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C47	1-164-471-11	CERAMIC CHIP	680PF	5%	50V
C48	1-135-202-21	TANTAL. CHIP	22uF	20%	4V
C49	1-164-362-11	CERAMIC CHIP	470PF	5%	50V
C50	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C51	1-164-237-11	CERAMIC CHIP	16PF	5%	50V
C52	1-164-238-11	CERAMIC CHIP	36PF	5%	50V
C53	1-124-576-11	ELECT	220uF	20%	4V
C54	1-135-202-21	TANTAL. CHIP	22uF	20%	4V
C56	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C57	1-124-576-11	ELECT	220uF	20%	4V
C57	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C58	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C61	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C62	1-164-362-11	CERAMIC CHIP	470PF	5%	50V
C63	1-162-568-11	CERAMIC CHIP	0.33uF	10%	16V
C64	1-164-346-11	CERAMIC CHIP	1uF		16V
C65	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C66	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C67	1-162-941-11	CERAMIC CHIP	10PF	0.5PF	50V
C68	1-162-941-11	CERAMIC CHIP	10PF	0.5PF	50V
C69	1-135-151-21	TANTALUM CHIP	4.7uF	20%	4V
C70	1-135-158-21	TANTALUM CHIP	15uF	20%	4V
C71	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C72	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C77	1-124-576-11	ELECT	220uF	20%	4V
C78	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C79	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C80	1-163-189-00	CERAMIC CHIP	220PF	5%	50V
		< FILTER >			
CF1	1-579-577-11	FILTER, CERAMIC			
CF2	1-579-974-11	FILTER, CERAMIC			
CF3	1-579-974-11	FILTER, CERAMIC			
CF4	1-579-578-11	FILTER, CERAMIC			
		< CONNECTOR >			
CN1	1-573-361-11	CONNECTOR, FFC/FPC 21P			
		< TRIMMER >			
CT1	1-141-327-11	CAP, VAR, TRIMMER (CHIP TYPE)			
CT2	1-141-327-11	CAP, VAR, TRIMMER (CHIP TYPE)			
		< DIODE >			
D1	8-719-981-25	DIODE KV1450			
D2	8-719-981-25	DIODE KV1450			
D3	8-719-951-05	DIODE KV1560			
D4	8-719-421-27	DIODE MA728			

TUNER

Ref. No.	Part No.	Description	Remark
D5	8-719-106-62	DIODE RD11M-B2	
D6	8-719-404-46	DIODE MA110	
D7	8-719-938-75	DIODE SB05-05CP	
D8	8-719-420-51	DIODE MA729	
D9	8-719-800-76	DIODE 1SS226	
D10	8-719-421-27	DIODE MA728	
D13	8-719-404-46	DIODE MA110 (E)	
D14	8-719-918-65	LED GL-1PR102 (BATT)	
D15	8-719-404-46	DIODE MA110	
D16	8-719-404-46	DIODE MA110	
D17	8-719-404-46	DIODE MA110	
D18	8-719-404-46	DIODE MA110	
D19	8-719-404-46	DIODE MA110	
D20	8-719-404-46	DIODE MA110	
D21	8-719-404-46	DIODE MA110	
D22	8-719-404-46	DIODE MA110	
D30	8-719-404-46	DIODE MA110	
D31	8-719-422-37	DIODE MA8051	
		< FILTER >	
FL1	1-236-921-21	FILTER, BAND PASS	
		< IC >	
IC1	8-752-065-30	IC CXA1111N-T4	
IC2	8-759-804-98	IC LA3335M	
IC3	8-759-174-06	IC uPD1724GB-635-1A7	
IC4	8-759-947-95	IC S-8051HN-CD-S	
		< JUMPER RESISTOR >	
JR1	1-216-864-11	METAL CHIP 0 5% 1/16W (E)	
JR2	1-216-864-11	METAL CHIP 0 5% 1/16W	
JR3	1-216-864-11	METAL CHIP 0 5% 1/16W	
JR4	1-216-864-11	METAL CHIP 0 5% 1/16W	
JR6	1-216-296-00	METAL CHIP 0 5% 1/8W	
		< COIL >	
L1	1-501-606-11	ANTENNA, FERRITE-ROD	
L2	1-406-733-11	COIL (RF)	
L3	1-406-731-11	COIL (OSC)	
L4	1-406-732-11	COIL (OSC)	
L5	1-412-002-31	INDUCTOR CHIP 4.7uH	
L6	1-412-006-31	INDUCTOR CHIP 10uH	
L7	1-412-006-31	INDUCTOR CHIP 10uH	
		< LIQUID CRYSTAL DISPLAY >	
LCD1	1-810-098-11	DISPLAY PANEL, LIQUID CRYSTAL	

Ref. No.	Part No.	Description	Remark
		< TRANSISTOR >	
Q1	8-729-402-42	TRANSISTOR UN5213	
Q2	8-729-402-84	TRANSISTOR XN4601	
Q3	8-729-117-72	TRANSISTOR 2SC4178	
Q6	8-729-220-93	TRANSISTOR 2SK209-G	
Q7	8-729-602-21	TRANSISTOR 2SC4154	
Q8	8-729-220-93	TRANSISTOR 2SK209-G	
Q9	8-729-602-21	TRANSISTOR 2SC4154	
Q10	8-729-602-21	TRANSISTOR 2SC4154	
Q13	8-729-144-15	TRANSISTOR 2SD2228-D43	
Q14	8-729-402-96	TRANSISTOR UN5114	
Q15	8-729-921-58	TRANSISTOR DTA144TU	
Q16	8-729-921-58	TRANSISTOR DTA144TU	
Q17	8-729-921-58	TRANSISTOR DTA144TU	
Q18	8-729-921-58	TRANSISTOR DTA144TU	
Q22	8-729-420-50	TRANSISTOR UN5215	
Q24	8-729-402-96	TRANSISTOR UN5114	
Q25	8-729-403-17	TRANSISTOR XN1215	
		< RESISTOR >	
R1	1-216-815-11	METAL CHIP 330 5% 1/16W	
R2	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R3	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R8	1-216-815-11	METAL CHIP 330 5% 1/16W	
R9	1-216-853-11	METAL CHIP 470K 5% 1/16W	
R10	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R11	1-216-814-11	METAL CHIP 270 5% 1/16W	
R12	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R13	1-216-853-11	METAL CHIP 470K 5% 1/16W	
R14	1-216-853-11	METAL CHIP 470K 5% 1/16W	
R15	1-216-853-11	METAL CHIP 470K 5% 1/16W	
R16	1-216-853-11	METAL CHIP 470K 5% 1/16W	
R17	1-216-853-11	METAL CHIP 470K 5% 1/16W	
R30	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R40	1-216-025-00	METAL CHIP 100 5% 1/10W	
R41	1-216-838-11	METAL CHIP 27K 5% 1/16W	
R42	1-216-838-11	METAL CHIP 27K 5% 1/16W	
R43	1-216-236-00	METAL GLAZE 39K 5% 1/8W	
R58	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R59	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R60	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R61	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R62	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R65	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R66	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R67	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R68	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R69	1-216-830-11	METAL CHIP 5.6K 5% 1/16W	

Ref. No.	Part No.	Description			Remark
R70	1-216-837-11	METAL CHIP	22K	5%	1/16W
R71	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R72	1-216-821-11	METAL CHIP	1K	5%	1/16W
R73	1-216-845-11	METAL CHIP	100K	5%	1/16W
R74	1-216-845-11	METAL CHIP	100K	5%	1/16W
R75	1-216-841-11	METAL CHIP	47K	5%	1/16W
R76	1-216-841-11	METAL CHIP	47K	5%	1/16W
R77	1-216-821-11	METAL CHIP	1K	5%	1/16W
R78	1-216-853-11	METAL CHIP	470K	5%	1/16W
R84	1-216-821-11	METAL CHIP	1K	5%	1/16W
R85	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R86	1-216-845-11	METAL CHIP	100K	5%	1/16W
R91	1-216-821-11	METAL CHIP	1K	5%	1/16W
R92	1-216-821-11	METAL CHIP	1K	5%	1/16W
R93	1-216-821-11	METAL CHIP	1K	5%	1/16W
R94	1-216-821-11	METAL CHIP	1K	5%	1/16W
R95	1-216-815-11	METAL CHIP	330	5%	1/16W
R96	1-216-821-11	METAL CHIP	1K	5%	1/16W
		< VARIABLE RESISTOR >			
RV1	1-238-091-11	RES, ADJ, CERMET	22K		
		< SWITCH >			
S4	1-692-510-11	SWITCH, PUSH (HOLD)			
S5	1-571-275-41	SWITCH, SLIDE (FM SENS OR FM)			
		< TRANSFORMER >			
T1	1-406-734-11	TRANSFORMER, IF			
T2	1-449-021-21	TRANSFORMER, DC-DC CONVERTER			
		< VIBRATOR >			
X1	1-579-615-11	VIBRATOR, CRYSTAL (75KHz)			

****

MISCELLANEOUS

****

68	1-648-954-11	HEAD FLEXIBLE BOARD
117	1-648-189-11	MOTOR FLEXIBLE BOARD
HP901	1-500-046-11	HEAD, MAGNETIC (PLAYBACK)
M901	1-698-124-11	MOTOR, DC

****

Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS	
		**********	
	1-504-228-11	HEADPHONE (MDR-013) (US)	
	8-953-538-90	HEADPHONE MDR-E741/K SET (E)	
*	3-388-080-01	CUSHION	
*	3-388-081-01	INDIVIDUAL CARTON (US)	
*	3-388-082-01	INDIVIDUAL CARTON (E)	
	3-389-201-01	CASE, CARRYING (CF-1)	
	3-756-924-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH) (E)	
	3-756-924-21	MANUAL, INSTRUCTION (ENGLISH) (US)	
	3-756-924-41	MANUAL, INSTRUCTION (SPANISH) (E)	
	X-3329-657-1	ATTACHMENT ASSY (E)	

English
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Sony Corporation
General Audio Group

9-957-800-11

Published by Customer Relations and Service Group

WM-FX52

SONY
SERVICE MANUAL

US Model
E Model

SUPPLEMENT-1

File this supplement with the service manual.

Subject : Change of the Audio Board

The last digit of the number for Audio Board has been changed to-12.
This supplement-1 contains revised PRINTED WIRING BOARD, SCHEMATIC DIAGRAM and ELECTRICAL PARTS LIST.

• CORRECTION

Correct your service manual as shown below.

☛ :Indicates corrected portion.

Page	INCORRECT			CORRECT	
	No.	Part No.	Description	Part No.	Description
36	L2	1-406-733-11	COIL (RF)	1-406-731-11	COIL (WITH CORE) (RF)
	L3	1-406-731-11	COIL (OSC)	1-406-733-11	COIL (WITH CORE) (OSC)

9-957-800-81

Sony Corporation
General Audio Group

English
93H0539-1
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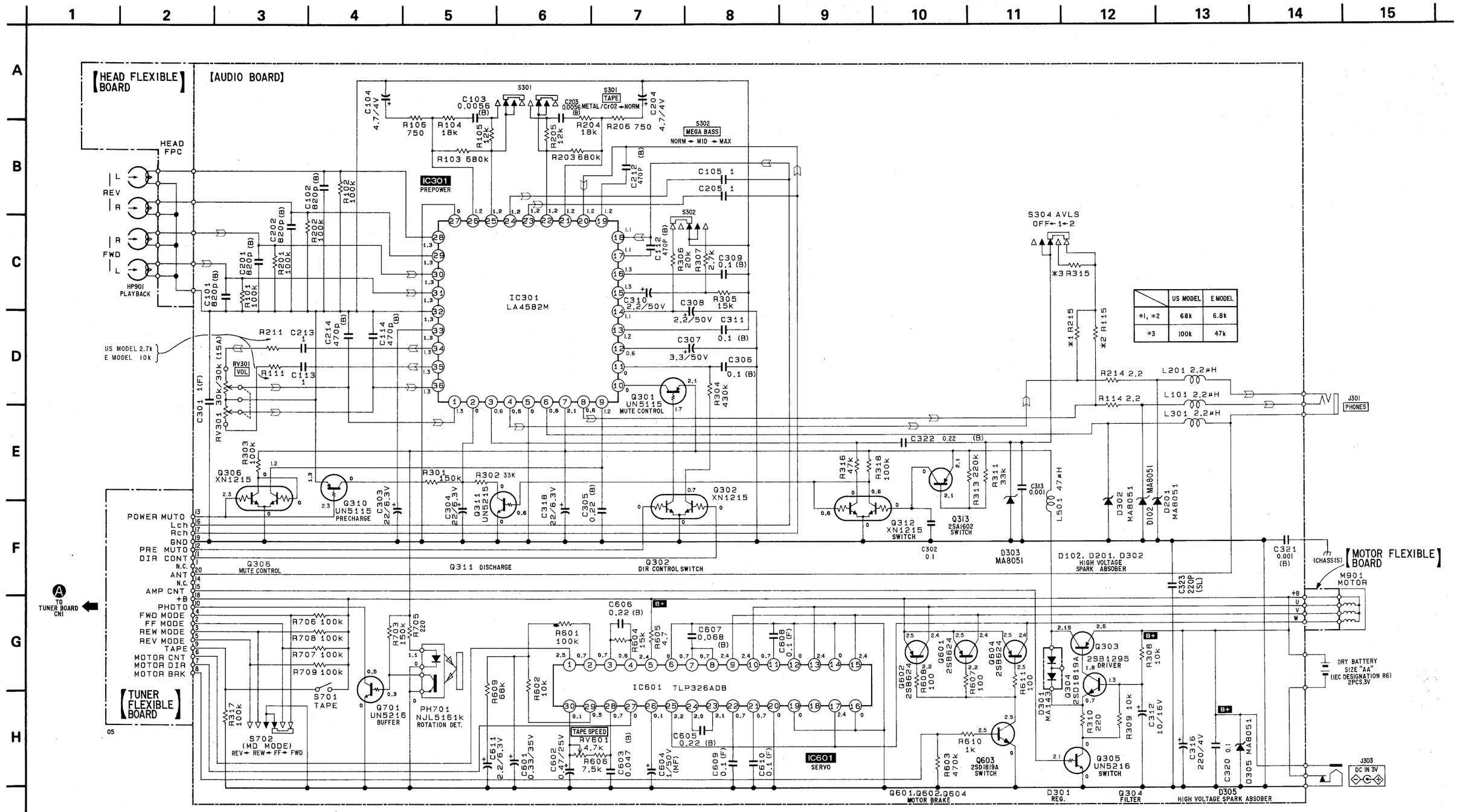
Published by Audio Sector Quality Assurance Dept.

1. ELECTRICAL PARTS LIST

Page	Ref. No.	FORMER		NEW	
		Part No.	Description	Part No.	Description
	C112	1-162-966-11	CERAMIC CHIP 0.0022uF 10% 50V	1-162-962-11	CERAMIC CHIP 470pF 10% 50V
	C212	1-162-966-11	CERAMIC CHIP 0.0022uF 10% 50V	1-162-962-11	CERAMIC CHIP 470pF 10% 50V
	C302		————	1-164-156-11	CERAMIC CHIP 0.1uF 25V
33	C320	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	1-163-038-00	CERAMIC CHIP 0.1uF 25V
	C321	1-164-156-11	CERAMIC CHIP 0.1uF 25V	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V
	C322	1-163-989-11	CERAMIC CHIP 0.033uF 10% 25V	1-164-489-11	CERAMIC CHIP 0.22uF 10% 16V
	D101	8-719-422-37	DIODE MA8051		————
	D102		————	8-719-422-37	DIODE MA8051
	D303		————	8-719-422-37	DIODE MA8051
	JR302		————	1-216-864-11	METAL CHIP 0 5% 1/16W
	R111	1-216-833-11	METAL CHIP 10K 5% 1/16W	1-216-826-11	METAL CHIP 2.7K 5% 1/16W (US)
				1-216-833-11	METAL CHIP 10K 5% 1/16W (E)
	R115	1-216-832-11	METAL CHIP 8.2K 5% 1/16W (E)	1-216-831-11	METAL CHIP 6.8K 5% 1/16W (E)
	R115	1-216-846-11	METAL CHIP 120K 5% 1/16W (US)	1-216-843-11	METAL CHIP 68K 5% 1/16W (US)
34	R211	1-216-833-11	METAL CHIP 10K 5% 1/16W	1-216-826-11	METAL CHIP 2.7K 5% 1/16W (US)
				1-216-833-11	METAL CHIP 10K 5% 1/16W (E)
	R215	1-216-832-11	METAL CHIP 8.2K 5% 1/16W (E)	1-216-831-11	METAL CHIP 6.8K 5% 1/16W (E)
	R215	1-216-846-11	METAL CHIP 120K 5% 1/16W (US)	1-216-843-11	METAL CHIP 68K 5% 1/16W (US)
	R314	1-216-861-11	METAL CHIP 2.2M 5% 1/16W		————
	R315	1-216-849-11	METAL CHIP 220K 5% 1/16W	1-216-845-11	METAL CHIP 100K 5% 1/16W (US)

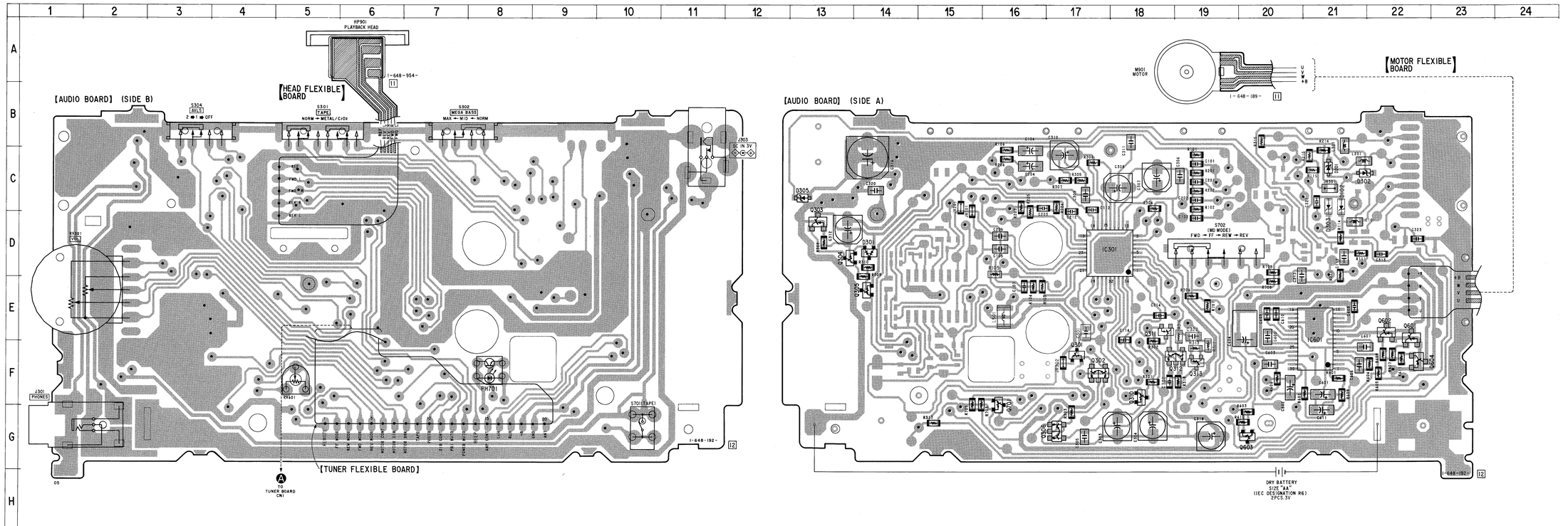
2. AUDIO SECTION SCHEMATIC DIAGRAM



Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- B+ : B + Line.
- : panel designation.
- : adjustment for repair.
- Power voltage is dc 2.5 V and fed with regulated dc power supply from external power voltage jack.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : PLAY
- Voltages are taken with a VOM (10 MΩ/V).
  Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM
  ⇨ : PB

3. AUDIO SECTION PRINTED WIRING BOARDS



• Semiconductor Location

Ref. No.	Location
D102	C-21
D201	C-21
D301	D-14
D302	C-21
D303	C-21
D305	C-13
IC301	D-17
IC601	E-21
PH701	F-8
Q301	F-17
Q302	F-17
Q303	D-13
Q304	D-13
Q305	E-14
Q306	G-17
Q310	F-18
Q311	E-18
Q312	F-18
Q313	F-19
Q601	E-22
Q602	E-22
Q603	G-20
Q604	F-22
Q701	F-16

Note:
• ● : Through hole.
• ▨ : Pattern from the side which enables seeing.
(The other layers' patterns are not indicated.)

Caution:
Pattern face side: (Side B) — Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Side A) — Parts on the parts face side seen from the parts face are indicated.